EVALUATION OF I. C. D. S. (INTEGRATED-CHILD DEVELOPMENT SERVICES) SCHEME A COMPARATIVE STUDY

THESIS FOR THE DEGREE OF

DOCTOR OF MEDICINE

(SOCIAL AND PREVENTIVE MEDICINE)



BUNDELKHAND UNIVERSITY JHANSI (U. P.)

CERTIFICATE

This is to certify that the present work *EVALUATION OF I.C.D.S. (INTEGRATED CHILD DEVELOPMENT SERVICES) SCHEME - A COMPARATIVE STUDY has been carried-out by DR. ASHOK NUMAR CUPTA, under our constant supervision and guidence. The observations were checked and verified by us from time to time.

The thesis fulfils the basic ordinances governing the submission of thesis for M.D., laid down by the Bundelkhand University.

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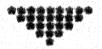
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INTRODUCTION

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"Many things we need can wait. The child cannot. Right now is the time his bones are being formed, his blood is being made and his senses being developed. To him we cannot

enswer 'Tomorrow'. His name is 'Today'".

Gabriela Mistral

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1. INTRODUCTION

In all countries children are loved and have a special place in people's lives, but a large number of them become a cause for sorrow because of illness or untimely death. The situation is specially grave in developing countries where hunger and diseases are main reasons for a collosal waste of life at an early age. These children do not die due to any exotic or grave illnesses but due to common diseases like diarrhoea, respiratory infections or from diseases easily preventable by immunisation. Malnutrition is another contributory factor leading to infections, and infections in turn, increase energy demands and decrease food absorption, so even the food that is available to these children is not absorbed thus making them more vulnerable to further infections.

India, one of the developing countries, has made a tremendous progress in almost all fields, such as agriculture, production, industrial development, technological advancement and improvement of health status of people during the past 35 years, resulting in the remarkable decrease in death rate (from 25.4 per 1000 in 1941-51 to 14.6 per 1000 in 1975-85) and spectacular

increase in life expectancy at birth (from 32 years in 1951 to above 56 years at present). However, inspite of wast strides taken in many fields, the health status of children specially below 6 years of age has not improved adequately. The major problem in our country is that about 80 percent of the total population lives in rural areas where basic requirements of life are not available. Poverty, ignorence, illiteracy, lack of medical facilities etc. further enhance the morbidity and mortality in this age group.

High mortality in infents end pre-school children is a common feature of all developing countries including India. The basic causes of high infent mortality being the poor nutritional status of infants, over exposure to massive doses of pathogenic micro-organisms and community's excessive fertility (Chandra Shekhar, 1972). These causes interact, supplement and reinforce each other.

Pre-school children are most seriously affected
by protein energy malnutrition, nutritional ensemia and
vitamin deficiencies because the nutritional requirements
of these children are proportionally higher for body weight
then those of adults and also, for cultural reasons and
economic constraints, they are given less nutritious diet.
In addition, they are often affected by intermittent
infections. Poor placental transmission of iron from
an aemic mother, improper weaming, deficient dietary iron

intake, G.I.T. disorders and parasitic infections are some of the important factors responsible for high prevalence of anaemia in this age group. In rural areas other contributing factors are superstition, ignorance, false beliefs and poor environmental conditions.

child bearing and rearing practices of the people are closely interwoven into the matrix of their socio-cultural milieu. A joint WHO/UNICEF meeting in Geneva in October '79 highlighted the child health problem related to infant and young child feeding practices. It states that poor infant feeding practices and their consequences are one of the major problems of the world and a severe obstacle to social and economic development. Breast feeding has been accepted as natural diet for new born baby by nearly all Indian rural mothers but variations may be in practices of supplementary feeding.

number of schemes have been implemented in India, one such scheme known as Integrated Child Development Services (I.C.D.S.) was launched in 1975, the objective of which is to improve the nutritional and health status of children below 6 years of age and to lay foundation for proper psychological, physical and social development of the child. To achieve the objective a package of services comprising of supplementary nutrition, immunisation,

health check-up, referral services, health and nutritional education and norformal education is provided in an integrated manner to the children below 6 years of age and expectant and nursing mothers.

The package of services is delivered at a community centre known as Anganwadi centre in each village covering the population of about 1000. The key person who provides these services is designated as Anganwadi Worker (A.W.W.) who invariably a female and selected from the local community. Anganwadi Worker is assisted by a helper who is also from the same area. The work of 20 Anganwadi Worker is supervised by one Mukhya Sevika. The child development project officer (C.D.P.O.) is overall incharge of project in one community development block.

and involving department of social welfare, health education and rural development. The scheme since its inception, has received varied comments and observations (Sunder Lal, 1980 & Patowari, 1982) creating doubt in the minds of people and administrators alike. It was, therefore, thought desirable to evaluate the I.C.D.S. scheme in one of the project - Chirgaon, Jhansi (U.P.), where the scheme was started in 1980-81.

Aims and Objectives :

The specific objectives of the present study are :

- To study the nutritional status and morbidity of children below 6 years of age covered under I.C.D.S. scheme and compared with children not receiving I.C.D.S. care.
- 2. To assess the utilization of health services by the population in I.C.D.S. care in comparison to the population not receiving the I.C.D.S. care.
- 3. To see the impact of I.C.D.S. services on mortality status of children below 6 years of age by comparing it with the children not receiving the I.C.D.S. care.
- 4. To identify areas of relative inactivity in the I.C.D.S. scheme requiring of augmentation.
- 5. To suggest measures for more effective implementation of the scheme.

REVIEW OF LITERATURE

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2. REVIEW OF LITERATURE

2.1 HISTORICAL

The care of children must have been one of the mankinds greatest pre-occupation from time immemorial. Scattered information is available regarding infant care, feeding and certain diseases in the ancient literature of Egypt, Babylon, Greece and Rome of 16th century B.C. (Landsberger, 1964). The description of diphtheria, mumps, division of umblical cord, salting the baby body with soda ash, importance of wet nurses, stress on breast feeding and avoidance of colostrum etc. finds a mantion in this literature.

There are extensive references about child care in ancient Indian ecriptures. Discussion on planned parenthood, antenatal care of mother, care of infants, their feeding on breast and animal milk are given in great details in vedic literature. Charak Samhita, anti-dating Buddha, has not only given a catalogue of child diseases and their management but also lays specific instruction regarding breast feeding and selection of wet nurses. The value of cow milk for infant feeding was well established in India as early as 5,000 years ago (Schles et al. 1943). Likewise,

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Susruta, as observed by Limmer (1948) in his book on Hindu Medicine, advices the physician to supervise the initial feeding of the new born. The universal practice of 'Annaprashan' - administration of semi solid foods at 6 months, though very old still holds good. Jiwaka, the court physician of King Bimbisara (298 B.C. - 273 B.C.) popularly known as 'Kumara-bhrtya' has written an excellent treatise on numerous diseases of children such as cirrhosis of liver, encephalitis, eruptive fever, diarrhoea etc.

In the middle ages super natural orientation and medico-religious ideas continued to dominate the concept of medicine. Ritual mutilation such as circumcision, scarification, scalding and ceremonial painting of child's body were practised, so to say for prevention of diseases (Mettler, 1947).

In 19th century in England, the children received scenty attention. Nortality rate was appalling and of London's 50,000 annual deaths, 21,000 were of children under 10 years (Higgins, 1952). However, in the 19th century itself the ground for modern concept of child care programmes was prepared replacing earlier religious attitude by scientific approach. Institutional care of the children was reorganised giving rise to establishment of separate children's hospital in France, Germany.

England, America and other countries.

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2.1.1 Child Care in India - Twentieth Century Lend Marks

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In India, though a lot more requires to be done, one has witnessed substantial progress since the turn of the present century regarding child care. Certain important land marks in India have been as follows:

2.1.1.1 Pre independence

- in 1902, programmes for the training of dais was instituted, for the supervisions of dais work, Lady Reading Health School was established in Delhi to train the midwifery supervisors and health visitors.
- 11) Consequent upon passing of the Child Welfare Act -1918, Lady Chelmsford All India League, another voluntary organisation was constituted in 1920 to initiate child welfare work.
- 111) Maternity and Child Welfare Bureau under Andian Red Cross was established to coordinate the working of the voluntary agencies in 1930.
- iv) D.M.C.W. course was established in 1933 at All India Institute of Hygiene and Public Health, Calcutta for woman doctors to qualify in maternity and child welfare work.
 - ') The Central Board of Health appointed a committee
 in 1937 to report on maternity and child welfare
 work in the country.

vi) Around 1940, two more all India voluntery organisations, Kasturba Memorial Trust and Indian Council of Child Welfare came into being.

2.1.1.2 Post Independence

Prior to independence, the maternity and child welfare was mostly looked after by voluntary organisations. In 1948, the post of Adviser Maternity and Child Welfare was created in the office of Director General of Health Services; and the Government of India impressed upon the states the need for strengthening their maternity and child health services.

(i) First Five Year Plan (1951-56)

to State Governments resulting in the establishment of 1000 maternity and child welfare units by the end of the plan. Expansion and improvement of nine health schools engaged in the training of health visitors and midwives, was also carried out. Assistance was given for upgrading Paediatric departments of four medical colleges.

(11) Second Pive Year Plan (1956-1961)

In this plan maternity and child welfare become integral part of the Primary Health Centres. There were 4500 Naternity and Child Welfare Centres in the States apart from Primary Health Centres.

(111) Third Five Year Plan (1961-66)

Child welfare extended over the spheres of social welfare, education, health and community development departments. There was a link-up of the maternity and child health services associated with primary health units with extended facilities in referal and district hospitals.

(iv) Fourth Five Year Plan (1969-74)

Social welfare sector introduced many family and child welfare projects. The concept was to promote child development and the focus was on family. The main feature of this plan were basic training of women in home-craft, health, education, nutrition and child care.

(v) Fifth Five Year Plan (1974-79)

In this plan, more importance was placed on pre-school years. The scheme of integrated child development services was introduced.

(vi) Sixth Five Year Flan (1980-85)

A distinct recognition of the importance of child health was the highlight of this plan. The Government of India took decision to upgrade one out of the four Primary Health Centre having the specialities vis. medicine, Surgery, gynaecology and pacdiatrics. A sum of supers 250 - 300 crores for maternal and child health was allocated. Increasing the Levis.

Projects to 1000 had been envisaged in the plan period (Dayal, 1982). Over and above these, the health and well-being of the mothers and children received due place in the 20 Points Programme of the Prime Minister of India.

(vii) Seventh Five Year Plan (1986-90)

A major component in this plan is the expansion of the social infrastructure for education, family welfare, health care, water supply and sanitation. As a result, the poverty ratio is expected to decline from 36.9% in 1984-85 to 25.8 percent in 1989-90 and simultaneously secure satisfaction of the basic needs of food, clothing and shelter and provide health for all. In this plan, target is to increase the coverage of elementary education in the age group of 6-16 years to 92%. The aim of this plan is to create, by the year 2000, the conditions necessary for self sustaining growth and to provide the basic material requisites of well being for all our people.

The major thrust of maternal and child health (MCH) care, in accordance with the National Health Policy, in the Seventh Five Year Plan would be as follows:

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(1) Health care for mothers and children will be strengthened through the primary health care approach, which includes integrated comprehensive MCH care and suitable strengthening of referral services.

- ii) Recognising the close relationship that exists between high birth rate and high infant mortality.

 a high priority should be given to MCH programme.
- iii) Preventive, promotive and educational aspects of MCH services will be given the highest priority.
 - iv) Efforts should be made to maximise the use of I.C.D.b. infrastructure for the enhancement of MCH programmes.

2.2 INTEGRATED CHILD DEVELOPMENT SERVICES SCHEME

In persuance of national policy for children, the Government of India sanctioned the Integrated Child Development Services Scheme which was introduced on an experimental basis on 2nd October, 1975. Thirty three experimental projects were started in the different parts of the country. On the basis of encouraging results, further extension of projects into 1000 areas has been planned (Tandon, 1982). Each project aims at the delivery of a package of services in an integrated manner to preschool children, expectant and nursing mothers, and women in the age group 15-44 years.

2.2.1 Objectives of L.C.D.S.

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- (i) To improve the nutritional and health status of children in the age group 0-6 years.
- (ii) To lay the foundations for proper psychological, physical and social development.

- (iii) To reduce the incidence of mortality, morbidity, malnutrition and school drop outs.
 - (iv) To enhance the capability of mother to look after the normal health and nutritional needs of the child through proper nutrition as well as health aducation.
 - (v) To achieve effective co-ordination of policy and implementation amongst the various departments to promote child development.

2.2.2 The Package of Services

To achieve the above mentioned objectives, I.C.D.S. provides a package of services (Tandon, 1982) which includes supplementary nutrition; immunisation; health check-up; nutrition and health education; referal services and non-formal education.

Supplementary nutrition is, in terms of cost, the major input in I.C.D.S. package of services which is given to prognant women and nursing mothers, malnourished children below six years and other children aged 3-6 years attending the non-formal pre-school educational activities.

2.2.3 Delivery of Services

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These integrated services are delivered at a community centre + Angenwedi Centre for a population of 1000.

The key staff member at this centre is the Anganwadi worker (A.W.W.), who is invariably a female and comes from the local community. Anganwadi worker is assisted by a helper who is also from the same area. Anganwadi worker and helper gets honorarium for their work, and are supervised by Mukhya Sevikas. The Child Development Project Officer (C.D.P.O.) is directly incharge of the I.C.D.S. Project concerned.

In rural project area, the health infra-structure is strengthened by adding one medical officer preferably with postgraduation in child health at the Primary Health Centre and by providing additional Lady Health Visitors and Auxillary Nurse Midwives so that there is one A.N.M. for a population of about 5000 and one Lady Health Visitor for supervising the work of 4-5 A.N.Ms (Dayal, 1977).

2.3 Envrionmental Samitation and Child Health

Expert Committee of the W.H.O. (1949) as 'The control of all those factors in man's physical environment which exercise or may exercise a deleterious effect on his physical development, health and survival'. The size, general health condition and maturing age of the child are influenced by the amount of fresh air and sunlight that one gets especially during the early years of life. This is evident when comparison are made between children from good and bad environment (Hurlock, 1950).

Chandra Shekhar (1959) in his book "Infant Mortality in India" has stated that since infants more then any other section of the population, depend to a large extent on the environmental conditions for their survival, it would not be far wrong to say that the death of an infant in most cases is due to poor and insanitary environment.

in Lucknow found that 95.6 percent of families were consuming water from open wells, and 69.2 percent were using open field as latrines. About housing 72.0 percent were situated in congested or moderately congested locality. While singh (1970) observed that 91.0 percent families were living in congested or moderately congested areas. Cross ventilation was only in 20.0 percent houses. 94.7 percent were using open shallow wells for drinking water and 89.0 percent of population was using open field for defaccation.

A global survey conducted by w.M.O. (1976) showed that 20.0 percent of the urban and 82.0 percent of rural population in India had no access to safe water within reasonable distance from their home, while 34.0 percent of urban population had access to a public severage system and only 2.0 percent of rural population was thought to have adequate excreta disposal facilities.

Deckinenden (1978) has reported that majority (46.5 percent) of children below six years were living in poor environmental conditions. On the other hand,

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Maheshwari (1981) observed that 82.10 percent families were using open field defaceation. Regarding water supply. 85.21 percent were using open shallow well for drinking purposes, 14.39 percent had handpumps. Indiscriminate throwing (42.07%) was observed the most common method for refuse disposal. Gupta et al (1984) observed that common source of drinking water in I.C.D.S. (94.2 percent) as well as non I.C.D.S. (97.8 percent) group has been open shallow wells and safe water supply observed more in I.C.D.S. area. Insanitary methods have been the commonest mode of excreta disposal in both the groups and no difference was observed in housing conditions except environment surrounding the child's house which was hygienic in respect of higher percentage in I.C.D.S. (30.7 percent) as compared to Noh I.C.D.S. (18.8 percent) group.

2.4 NUTRITIONAL ANTHROPOMETRY

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Nutritional anthropometry is concerned with the measurements of the variation of physical dimensions and the gross composition of the human body at different age levels and degree of nutrition. Three main anthropometric measurements have been mostly employed in community field surveys for detecting malnutrition of early childhood and where the age is known. These are weight, length/height and mid-upper arm circumference. In addition to this, tricep's skinfold can also be usefully included. Circumference of head and chest are the two other anthropometric

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measurements in detecting malnutrition. These can be compared with standards if the ages are known (Jelliffee, 1966).

2.4.1 <u>Weight</u>:

Five decades ago, Baldwin (1924) wrote that weight and height are probably the most sensitive measures of nutritional status of children. This is still valid, however the major draw-back of weight as an ideal anthropometric measurement is that in many communities, especially of rural areas and uneducated classes, the exact age is not known (Presed. 1976). Waterlow (1973) criticized weight for age method of assessing mild and moderate malnutrition. He stated that it conceals two different conditions, one deficit in height for age (stunting) and other deficit in weight for height (wasting). He stressed that these condition should be assessed and differentiated separately. However, Sen et al (1980) have observed that a valid age independent estimate can be made by using weight/height2 ratio in a study of children below five years in Jaipur city. They found that weight/height zatio (0.0015) was equally valid in comparison to weight for age method in detecting malnutrition.

Ghal of al (1968) in a study have reported that
the birth weight was doubled at 3.5 months, tripled at
one year and quadripled at 2.5 years, whereas Banik et al
(1970) concluded in their longitudinal study from birth to
5 years, that the birth weight was doubled at 4 months,
tripled by 1.5 years and quadripled by 3 years of age.

Males were heavier than females at all ages. Bhargeve et al (1980) recorded that the birth weight of male children doubled in 3 months and tripled at one year of age.

Sakshi et al (1977), in their cross-sectional study of pre-school children, representing various socio-economic groups, reported gradual increase in weight with age. The boys had higher weight than girls. Girls were 2-3 months behind the boys, 50th percentile of weight was comparable with 3rd percentile of Harvard standards. Weight of male children at the age of 5 years was in line with I.C.M.R. standards, but at the age of 2 years they were much behind the I.C.M.R. standards.

Chandra (1978) from Tamil Nadu also found higher values for weight in boys than girls in all ages. Hean weight was much lower than I.C.M.R. standards. Similar observations have been made by Verma et al (1980) from Jhansi and Tomar et al (1982) from Rajasthan and Gupta et al (1984) from Lucknow.

I.C.M.R. conducted a collaborative study on the nutritional status of pre-school children in 3 rural and 2 urban regions in the country. All anthropometric measurements of Indian children were significantly lower than American children (Pandon et al. 1981).

girth weight has been shown to be an important factor influencing the later growth in child (Bhargava et al. 1975) and, therafore, the differences in growth pattern of Indian and Western children may be partly due to birth weight of Indian babies being lower than that of western counterparts (agarwal et al, 1974). A longitudinal study of physical growth from birth to six years in children with birth weight 2500 gm, or more, mainly from low socio-economic groups, showed that the growth velocity of children upto 2 years was comparable with western standards and Indian children of high income group. But after 2 years, there was decline in growth velocity. The weight of male children was recorded higher than female children from birth to 6 years (Shargawa et al, 1980).

2.4.2 <u>Height</u> :

The eighth report of P.A.O./W.H.O. Expert Committee on nutrition emphasized upon the importance of measurement of height. The extent of height deficit in relation to age may be regarded as a measure of duration of malnutrition. This concept has been studied and confirmed by Second & Latham in their study found that the height for age gives the information about the state of past nutrition, and they suggested that stunting occurs only in chronic malnutrition. This observation was confirmed by Sashtri et al (1973) in their study.

Chai and Sandhu (1968) observed that the length at birth web increased by about 50.0 percent at one year and was doubled at 4 years of ago, while Sanik et al (1970) reported increase in birth length by 50.0 percent at 1.5 years and about double at 4.5 years.

to be taller than girls except at five years age when girls had slightly higher values. On comparison with Harvard standards, 27.4 percent children had mean height above 90.0 percent. 69.2 percent were between 81.0 - 90.0 percent and only 1.2 percent children had values below 70.0 percent of Harvard standards. On comparison with 1.C.M.A., 50th percentile in girls at 2 years was below 25th percentile of 1.C.M.A., and at the age of 5 years it was little above 50th percentile of 1.C.M.A. In boys at 2 years, 50th percentile of this study was little above 25th percentile and, at the age of 5 years it was little below the 50th percentile of 1.C.M.A. This indicated better growth rate after passing the vulnerable period of 1-3 years.

Chandra et al (1978) found that mean height of boys was more than girls upto the age of 2 years, than girls exceeded the boys. Mean height of both sexes at all ages was below the I.C.M.R. standards. While Srivastava (1980) and Gupta et al (1984) reported that boys were taller than girls at all ages. In comparison with All India Standards, they also showed considerably lower values. Similar observations were made by Verma (1980) who further noticed that 53.4 percent of pre-school children were under-weight. While Ram (1980) from Karnataka reported 66.4 percent of children below six years of age having less value for height than expected Value for that age.

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with better socio-economic status, it is possible to have growth potential similar to those of Americans. A semi-longitudinal study from birth to 14 years in different socio-economic group found mean (50th percentile) height and weight of children from higher socio-economic group well comparable with 50th percentile of American children. The mean (50th percentile) of height and weight of children of both the sexes belonging to lower socio-economic groups corresponded with 25th percentile and 10th percentile respectively of American standards (Sanik, 1982).

2.5 MILE STONES OF DEVELOPMENT

Hile stones are definite land marks in growth and development of a child and they are influenced by nutritional status of children. Nathur et al (1974) in their study found that 26.5 percent of total children were having delayed mile stones and in those who were malnourished this percentage was 37.7 percent. Magatra et al (1976) in a study of 100 cases of P.E.M. observed Growth retardation in all the cases.

Deaki Nandan (1978) in his Study in pre-school children of Utter Predesh has also observed delayed mile stones in grade III and IV P.S.K. and Cupta et al (1984) has also observed delayed mile stones in malnourished children.

2.6 MALMUTRITION

It comprises of four forms - under nutrition, over nutrition, inhalmos and specific deficiencies, malnutrition

has been defined as 'a pathological state resulting from relative or absolute deficiency or excess of one or more essential nutrients (w.H.O., 1966). What makes the situation more serious is that mainutrition's main victims are children. Most vulnerable group is the pre-school children (Scrimshow, et al. 1968).

2.6.1 Protein Energy Melnutrition

An emalysis of 101 community surveys conducted in 59 developing countries during 1981-1970 indicated that not less than 100 million children below 5 years of age are affected by moderate to severe degree of Frotein Energy Malnutrition (W.M.O., 1976). Also Baily et al (1976) here reported that a survey carried out in children below 5 years in 26 countries between 1966-1969 showed the prevalence of severe form of Protein Energy Malnutrition to be 0.5 to 7.0 percent which gives everage prevalence of about 3.0 percent and 2.0 percent respectively. Many studies have been carried out in India regarding the problem of protein energy malnutrition in pro-school children. Kumer et al (1975) from Haryana reported that 61.7 percent children had body weight below 80.0 percent and 36.2 percent below 70.0 percent of the expected weight (Hervard Standards), while Chaudhary (1975) in Calcutta found the prevalence of severe P.B.M. to be 2.0 percent and mild and moderate grades of P.B.M. in 20.0 percent of pre-school children.

Rem et al (1977) reported the prevalence of third and fourth degree of Pallak. in 11.5 and 2.9 percent of pre-school children respectively in slum areas of Tamil Nadu, whereas Chandra (1978) observed severe grade of malnutrition in 21.7 percent of pre-school children. Grade one and two malnutrition (Gomes Standard) was found in 24.9 and 47.6 percent of cases respectively. On clinical examination 3.0 percent had kwashiorkor or marasmus or marasmic kwashiorkor. However, Aya Ram (1980) observed overall prevalence of P.E.M. to be 70.0 percent in pre-school children of Karnataka.

Cupta (1977) in his study of Health Status of Children in age group 1-4 years in rural area of Jaipur found 72.7 percent children malnourished, and 9.2 percent and 4.9 percent children having grade III and grade IV malnutrition respectively. Whereas, Mathur et al (1978) from their analytical study of malnourished children below the age of five years in rural area of Udaipur, reported that 33.33 percent were in grade I, 51.63 percent in grade II and 14.39 percent in grade III of malnutrition.

A study of under five years children of rural area of western Rajasthan showed Protein Snergy Malnutrition in 82.5 percent of children (Soni, 1980). Similarly, a study from tribal bolt of western Rajasthan has also reported very high prevalence of P.S.M. (73.5 percent). Prevalence of severe grade of Malnutrition (grade II and grade IV) has been 16.4 percent (Tomar et al. 1982).

A study conducted by I.C.M.R. in 1977 in different parts of India has shown prevalence of Kwashiorkor in 1.0 percent and marasmus in 2.0 percent of pre-school children. Similarly a base line survey of 27 Project Blocks (I.C.D.S.) has revealed the prevalence of Marasmus in 4.0 percent and Kwashiorkor in 1.7 percent of rural pre-school children. Overall prevalence was found to be 77.0 percent in rural children. 26.1 percent of children were in grade I. 27.0 percent in grade IX. 12.6 percent in grade IX. and 4.7 percent in grade IV of malnutrition (Tandon et al. 1981).

Gupta et al (1984) while comparing impact of I.C.D.S. scheme in district Raibareilly of Uttar Predesh observed significant difference in the prevalence of severe degree of P.S.M. in the children receiving I.C.D.S. care.

Based on the reports of Mational Mutrition

Monitoring Bureau, M.i.B. (1982) has reported the following

prevalence of severely malnourished pre-school children

in different states of India.

485	200		4	-
200	100	200	嘅	488
300		100	120	200

P.E.M. Prevalence

West Bengal Mark the Continue to Percent

Original Mark the Mark the Continue to Percent

Original Mark the Mar

Maharashtra	11.3	percent
Andhra Fradesh	7.8	percent
Karnataka	7.7	percent
Tamil Nada	6.5	percent
Kerala	4.8	percent

2.6.1.1 Protein Energy Malnutrition in Utter Predesh

The findings of various studies of P.E.M. undertaken in Uttar Pradesh are summarised here.

Authors	Elace	Less	Fate (%)	Criteria of Diagnosis
Siddhu & Srivastava	Aural Kanpur	1970	5.1	Clinical
Singh Rates	Aural Lucknow	1971		Comes
Sherma P. et al	Uzban Lucknow	1972		Clinical
Mathur J.S. ET AL	Kenput	1974	1.0	Clarked
Szivestava et al	Luc know	1978	40.7	Comes
Depki Nandan	Res Barel	L 1978		Gomea
Verme, D.L. et al	James.	1980	97.5	Jelliffe
Srivestave, J.F	Jhandi	1980 Boy GLE	75.7 la - 78.1	Gowes

The food and nutrition survey carried out in different parts of U.P. by Food and Mutrition Board, has revealed the overall prevalence of P.E.M. to be 84.7 percent

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(Gomes Criteria) of these, 40.3 percent, 35.1 percent and 21.3 percent were having mild, moderate and severe grades of P.E.M. respectively (Sharma, 1981).

2.6.2 VITAKIN DEFICIENCIES

2.6.2.1 Vitamin A Deficiency

tions of the state of the state

Vitamin deficiencies like infentile beri-beri,
pellagra ariboflavinosis, infantile scurvy and rickets are
quite frequently reported in India but Vit. A. deficiency
is the commonest in pre-school children. The most common
age for predominantly nutritional variety, is the third and
fourth years of life, atleast in countries where breast
feeding is prolonged (Oomen, 1976). The prevalence of Vit.
A deficiency has been reported to be about 3.0 - 8.0 percent
in poorer section of pre-school Indian children (M.H.O., 1976).

Mathur et al (1974) have observed Bitot's spots
in 4.9 percent children aged below 5 years in a rural
community of Kanpur, Also, I.C.M.R. (1977) reported
Bitot's spots in 4.1 percent of pre-school children.
Contrary to this, Chandra et al (1978) observed very high
provalence of Vit. A deficiency in rural pre-school children
of Tamil Nadu. Might blindness was found in 4.03 percent.
Conjunctival merosis in 27.7 percent, Bitot's spots in
8.7 percent, Corneal merosis in 0.6 percent and Phrynoderma
in 1.5 percent children.

A clinical study of pre-school children in rural and urban areas of western Rajasthan showed the prevalence of night blindness in 2.9 percent, Bitot's spots in 2.2 percent, conjunctival xerosis in 1.31 percent and corneal xerosis in 1.29 percent of children (Gupta et al. 1978). But Srivestava et al (1979) reported Vit. A deficiency in 15.95 percent of pre-school children in a rural area around Jhansi. Whereas, Soni et al (1980) observed Vit. A deficiency in 12.4 percent in rural pre-school children of Rajasthan. On the basis of baseline survey in different 1.C.D.D. Project areas, Tandon et al (1981) have reported Bitot's spots in 4.0 percent Keratomalacia in 0.4 to 0.2 percent of rural children below 6 years of age.

The prevalence of conjunctival Marcais as 4.0
percent, Bitot's spots 1.8 percent and follicular
Hyperkeratosis 0.4 percent in pre-school children has
been reported in Food and Mutrition Survey carried out in
Uttar Pradesh (Sharas, 1981). On the other hand, Tomar (1982)
found Vit. A deficiency in 19.89 percent children aged
under 6 years.

It has recently been estimated that amongst the 92 million children aged 1-5 years, 7.4 million have non-corneal and 0.22 million have corneal merophthalmis at any one time. \$2500 children become blind and between 110,000 and 13,200 become partially blind in India every year (w.s.o., 1932).

Gupta et al (1984) reported in his study that prevalence of Vit. A deficiency in I.C.D.S. (0.5 percent) and Non-I.C.D.S. (4.2 percent) group of children. Maheshwari et al (1985) reported 21.28% Vit. A deficiency in rural pre-school children of Rajasthan.

2.6.2.2 <u>Vitamin '3' Deficiency</u>

Chandra et al (1978) have observed angular stomatitis in 34.7 percent of rural pre-school children of Tamil Nadu. But Srivastava et al (1979) from Jhansi reported Vit. B deficiency only in 3.82 percent and Soni et al (1980) found it to be in 4.2 percent of rural pre-school children of Rajasthan.

Sharma (1981) has reported angular stomatitie in 3.6 percent of pre-school children while Tomar (1982) found vit. B deficiency only in 0.40 percent of children aged below 6 years and Gupta et al (1984) found no difference in prevalence of angular stomatitie in I.C.D.S. (6.2 per 100) and Non-I.C.D.S. (7.6 per 100) group. Maheshwari et al (1985) reported 2.13 percent Vit. B deficiency in pre-school children.

2.6.2.3 Vitamin 'C' Deficiency

Mathus (1974) observed bleeding Spongy gums in O.9 percent of pre-school children in sural community of Kanpur, and Srivastava (1979) found Vit. 'C' deficiency in O.67 percent of sural pre-edhool children of Jhansi. Soni

et al (1980) have reported that 0.4 percent of rural preschool children of Rajasthan were having Vit. C deficiency while Sharma (1981) from Uttar Pradesh has reported Vit. C deficiency in 0.9 percent of pre-school children.

2.6.2.4 Vitamin 'D' Deficiency

Pigeon chest was observed in 0.9 percent of preschool children of a rural community of Kanpur by Mathur et al (1974), whereas Supta et al (1978) observed clinical ricket in 3.6 percent pre-school children of Rajasthan.

deficiency in 2.02 percent of pre-school children, while soni et al (1980) observed a high prevalence (5.9 percent) of Vit. D deficiency in rural pre-school children. An alarmingly high prevalence (11.99 percent) of Vit. D deficiency has been recently reported by Tomar (1982) from children eged under six years of a tribal belt of western Rajasthan. Meheshwari et al (1985) have observed Vit. D deficiency in 8.45 percent of rural pre-school children of Rajasthan.

2.6.3 Angenia

The frequency of engents may be as high as 40.0 percent in the first year of life (N.H.C., 1982). Mathur et al (1974) moted pale conjunctive in 18.5 percent children below 5 years of age in sural area of Kanpur, while Malhotta et al (1976) from the same area Observed the prevalence of

anaemia in 18.32 percent of pre-school children; majority (44.0 percent) of anaemic being aged 6 months to 2 years whereas it has been only 7.8 percent in those under six months of age. Anaemia was more prevalent in female than male children. The Haemoglobin level was below 7.0 gram percent in respect of 8.11 percent children, Gastro-enteritis or respiratory illnesses were found associated in 64.7 percent of the anaemic children.

It has been estimated that provalence of anaemia in pre-school children and pregnant women is about 50.0 percent (Gopalan, 1977). However, pallor was observed clinically in a very high percentage (69.1) of pre-school children of mural Tamil Hadu (Chandra et al. 1978). On the other hand, Srivastava (1979) clinically observed anaemia in 4.7 percent pre-school children of a mural community of Jhansi. Contrary to this, Somi et al (1980) reported high incidence (62.0 percent) of anaemia in pre-school children of mural Rajastham. Hajority (69.2 percent) had hasmoglobin between 50 - 70 percent of the expected values, 9.3 percent were found severely anaemic.

rendon se al (1981) from the different project
(ICDS) areas of the country have reported pallor in 22.0
percent of rural and 17.0 percent tribel children aged
below six years. However, then (1981) observed manuals
in 24.2 percent pre-school children in the familiae hering
loss than 3 children and in 31.6 percent children of the
familiae having more than 3 children.

that the prevalence of anaemia depends on the availability of medical facilities. They observed the prevalence of anaemia in 17.8 percent rural pre-school children who were not having sub-centre facilities, while it was only 12.3 percent in those for whom the sub-centre facilities existed. Gupta et al (1984) was observed higher prevalence (27.3 per 199) of anaemia in Non-I.C.D.S. as compared to 1.C.D.S (13.2) group of children. Maheshwari et al (1985) reported overall incidence of anaemia in the surveyed children was 53.25% and incidence of anaemia was 44 percent in the age group of 3 - 6 years.

2.7 MORBIDITY

In developing countries, the protein energy deficiency disease, kwashiorkor and marasmus are commonly precipitated by Acute diarrhocal diseases, measles, whooping cough and other infections and high mortality in these children is attributable to the interaction of malnutrition and infection (N.H.O., 1976).

Many investigators from India have reported gastro-intestigated and respiratory infections as major causes of morbidity in pre-school children (Ghai et al. 1970; Culati, 1976; Mata, 1975; Debte et al., 1975). A cross sectional study carried out by Chandra (1978) in pre-school children of sural Tenil Nada Teveshod 50.0 percent having current or recent apisodes of distributed disorders.

respiratory illnesses, worm infestations and superative otitis media. Diarrhoea, U.A.T.I., L.A.T.I., C.S.O.M., were found in 50.7, 58.1, 17.8 and 13.1 percent children respectively. 32.0 percent suffered from active skin infections, heart diseases and C.N.S. disorders were noted in 1.07 and 0.23 percent children respectively.

Gupta et al (1980) from a longitudinal study in a rural area of Punjab reported that on an average a preschool child was sick roughly for 2 months in a year, and respiratory and gastro-intestinal disorders constituted 45.37 percent of the total sickness. Agarwal et al (1980) studied the morbidity pattern of rural under five children of Varanasi by fortnightly visits over one year. Sickness per child was 6.69 suggesting recurrent episodes. The common problems were gastro-intestinal diseases (33.5 percent) respiratory tract infections (19.3 percent), skin disease (13.6 percent) and fevers (13.2 percent). The commonest easily preventable illness at an early stage, were mild diarrhoes and upper respiratory tract infections. Diseases of eye and ears were found to be in 7.85 and 2.74 percent children respectively.

Pandon et al (1981) from I.C.D.S. project areas
have reported that about 9.0 percent of rural and 7.0
percent of tribal children were alok at the time of survey.
Upper respiratory tract infertions (1.0 - 1.5 percent) and
acute diarrices (0.6 percent) were the two major significant
linears. Names was observed in 0.3 percent children by

There is significant evidence to the relation of Family size and sicknesses in children. When (1981) observed high incidence of respiratory infection (39.7 percent), gastro-enteritis (40.9 percent) and skin infection (22.7 percent) in pre-school children belonging to families with 3 or less than children as compared to 67.9 percent. 62.0 percent and 50.5 percent respectively in children belonging to families with more than 3 children. However, respiratory infection, gastro-enteritis and skin infections were the major causes of morbidity in both the groups.

Gupta et al (1984) reported in his study that upper respiratory infections and diarrhoea & dysentery were major causes of sickness in both I.C.D.S. and Non-I.C.D.S. groups.

Maheshwari et al (1985) observed that malnourished children suffered more with veriety of illnesses in the past as well as the time of study. Sickness per sick child in normally nourished children was 1.42, which increased to 2.41 in severely malnourished children. There was a significant correlation between malnotrition and infection in the past and present morbidity.

health problem in young children. Its relation with malmutrition has been worked out by many investigators
(Tripathy et al. 1977; Latines et al. 1977; Supt. et al. 1978; Supt. et al. 1

Ankylostoma, Teemia solium, E. histolytica were found in 19.6, 1.8 and 3.6 percent of the samples respectively. In 8.9 percent of cases, it was mixed infection. However, Malhotra et al (1976) from Kanpur observed the overall infestation rate of 23.5 percent in rural pre-school children. Gupta (1977) has also reported ascaris as the commonest parasite in pre-school children.

Chandra (1978) reported worm infestation rate to be 21.8 percent in pre-school children of rural Tamil Nedu. Whereas a study carried out in Dalmau Block of Uttar Pradesh (Deoki Nandam et al, 1980) revealed the presence of one or other form of intestinal parasite in 34.1 percent of the stool samples collected from the children below 6 years of age. The most common parasite encountered was ascaris (38.6 percent) followed by hook worm (33.6 percent). Similarly, Brar et al (1980) from Patiala reported 31.9 percent stool samples positive for one or the other infestation. Ascaris was most frequent (17.02) among all the sample collected.

Age Res (1980) from Karnetake found positive history of passing worm in 27-11 percent of malnowrished and 10-60 percent of the normal children. A study by Khen et al (1980) from urban Aligarh here rerealed prevalence of worm infestation in 17-7 percent pre-school children belonging to small familiars as compared to 25-8 percent in children belonging to scall to large families.

Gupta et al (1984) reported 33.1 percent in Non-I.C.D.S. group and 17.2 percent in I.C.D.S. group stool samples positive for one or the other parasites.

Ascaris was found to be most common parasite in both groups.

Maheshwari et al (1985) observed 24.84 percent of the children suffered from intestinal parasites, and infestation per infested child was 1.16. Ascariasis topped the list (31.7 percent) of the infected children. Incidence of parasitosis was 4 times higher in severely malnourished children as compared to normally nourished.

2.8 IMMUNISATION

programme in India for nearly three decades, the coverage of population is poor especially of D.P.T. and Polio vaccination. Kumar et al (1972) reported that only 60.0 percent pre-school children were protected for smallpox in a rural area, while Philip et al (1976) found the coverage of smallpox in 50.0 percent of rural pre-school children and the coverage of B.C.G., D.P.T. and Polio immunisation was observed in 13.5 percent each.

A study conducted by Sharma et al (1978) in Fural and urban areas of James has revealed 70.0 percent children below 5 years were vaccinated against smallpox while revectination was done only in 10.0 percent. 50.0 percent children were given S.C.G. and D.P.T. while oral Polic was

Ramesh et al (1978) from Agra have reported very poor immunisation coverage in infants of rural as well as urban areas. Only 1.2 percent rural and 6.3 percent of urban infants were given B.C.G. vaccination. The D.P.T. coverage was only in 1.3 percent of rural infants and 1.5 percent had received protection against polio.

Chandra et al (1978) from rural Tamil Nada
reported 93.0 percent coverage against smallpox, 4.8 percent
against tuberculesis and 0.35 percent against polio.

D.F.T. was given in 17.2 percent children. However,
Gupta (1978) reported coverage of smallpox vaccination in
96.4 percent B.C.G. in 62.1 percent and D.F.T. and polio
in 23.9 percent pre-school children of a maral area, the
coverage of B.C.G. in 50.8 percent and D.F.T. in 29.6
percent of rural pre-school children.

have also reported poor immunisation as B.C.G. was 17.0 percent in rural and 23.0 percent in tribal areas. D.P.T. was given to 7.0 percent of rural and 5.0 percent of tribal children. A study from rural Aurangabad has revealed 68.7 percent coverage for smallpox, 23.01 percent for B.C.G.. 7.51 percent for D.P.T. and 8.78 percent for oral police. (Deptal, 1981).

to be 83.0 percent. Complete D.P.T. Veccination was given

to 8.6 percent, while oral polio and B.C.G. was given to only 0.4 and 0.4 percent children respectively. Oupta et al (1984) reported higher coverage of all types of vaccination vis. B.C.G., D.P.T., Polic & D.T. in l.C.D.S. Group as compared to Non-I.C.D.S. group. Dattal et al and Sahu et al observed relatively low coverage of B.C.G. (25.0 percent and 12.8 percent respectively). The difference in coverage of B.C.G. in these study could be because of place variation and time of study which was in 1979 and 1982 respectively. Josesh et al found 8.8 percent and 12 percent coverage for 1st dose of D.P.V. and D.P.T. in pre-school children. However, a study in Rejesthan, carried out in 1981-82, showed a poor coverage of 0.2.v. & D.P.T. (5.9 percent end 4.5 percent respectively) in the 1 - 2 years of age group. Coverage for measles was found 23.7% by D.P. Mohil.

2.9 PERDING PRACTICE AND CHILD HEALTH

which (1973) has recommended that the breast feeding should be continued, if possible, upto the ege of 12 months or longer in some circumstances to provide a valuable nutritional supplement. Food supplimentary to breast wilk will need to be introduced by 4-6 months of age. There has been remarkable progress in the technology of making infant food. Nevertheless, scientific swidence is confirming the superiority of breast feeding because of its support of the bonding of mother and child, and the psychological support

of the child, the nutritional and physiological properties of human milk, its immunological properties and other health benefits extending into adult life and its advantages for the mother (UNICEF, 1981).

morbidity has also been established by a number of studies (James, 1972; Chandra, 1979; Cunnighan, 1979). Recently Kumar et al (1981) reported that diarrhoes, U.A.T.I. and allergies were less common amongst breast fed infants and more so during first month of life. Idris et al (1981) from Lucknow have also reported less incidence of diarrhoes in breast fed in comparison to artificially fed infants.

Breast feeding though favoured in India, differences exist in practices related to its commencement and duration (Gupta, 1979). This has been further confirmed by Birmal et al (1981) from Devengere and Idris et al (1981) from Lucknew and Gupta et al (1984) from Lucknew.

2.9.1 Pirst Breest Food

parts of India and found that except for Hyderabed and Coimbatore, where majority of the mothers fed colestrum to infants, breast feeding in most of the parts of country was generally delayed until 3 - 6 days after birth due to widely provident belief that lectation is not established till them. Agarwal et al (1961) from Varanasi also had similar findings.

2.9.2 Period of Exclusive Breast Feeding

Prolonged breast feeding without supplementation has been a very common practice in India specially in rural areas. Recently, a study conducted in urban and rural area of Lucknow by Idris et al (1981) showed that even after the age of six months, 42.1 percent rural infants were exclusively dependent on breast feeding. Moreover, even after the age of one year, 20.6 percent rural infants were exclusively breast fed. Indra Sai et al (1981) have also reported that in rural areas 38.4 percent infants were exclusively breast fed upto 6 - 9 months of age.

2.9.3 Total Duration of Breast Feeding

breast feeding in rural areas. Sharma et al (1977)
observed that 47.7 percent of rural children continued the
breast feeding even beyond 2 years of age while Bhal (1979)
from Himschal Pradesh reported that majority (58.0 percent)
of children were breast fed even upto 36 months of age.
It was also observed that 30.0 percent of mothers continued
to give breast milk to their children even beyond 3 years of
age. Recently, Katiyar et al (1981) and Ajai et al (1982)
have also observed prolonged total duration of breast feeding
in rural area.

2-9-4 <u>Beaning</u>

Delayed weaning is very commonly observed in fural area. Sharma (1977) reported that only 22.6 percent of rural

children had received solids below 9 months of age. Also, Bakshi (1977) in Bhopal found that maximum number (62.8 percent) of rural pre-school children were weened between the age of 1.5 to 2.5 years. Moreover, 2.8 percent children were still absolutely breast fed even after three years of age.

Bahl (1980) from Himachel Pradesh has also concluded that in majority (92.0 percent), semi-solid was introduced at the age of 13-24 months and only in 30.0 percent children semi-solids were introduced after 9 months of age. Katiyar et al (1981), observed delayed weaning in rural group of children. Weaning was introduced only in 33.63 percent of rural children upto the age of 6 months. Most of the rural children (27.08 percent) were weamed at the age of 13 - 18 months and 7.14 percent children were weened after the age of 2 years. Similarly, a study from Chandigarh has reported delayed administration of semi-solids i.e. beyond 6 months of age in 93.6 percent rural infants. Mean age of starting semi-solid food was 8.3 months (Numer et al. 1981) and Quota et al (1984) observed mean age at weaming in I.C.D.S. group was 11.2 months while in Non-I.C.D.S. it was 15.4 months.

2.10 MOSTALITY

according to estimates of Government of India, about one fifth of total deaths in population occur in the first year of life, while enother one fifth of dies in the ege

group of 1-4 years (School Health Committee, 1962), Sharma et al (1978) have also reported that out of the total deaths occuring in India, 30.6 percent occur during infancy and 14.6 percent in the age group of 1-4 years.

Oulati (1967), carried out a survey in children under 5 years of age in semi urban area of Delhi and found overall mortality to be 66/1000 per year. Out of these, 74.0 percent died in the first three years of life. However, in 1981, 25-44/1000 mortality has been observed in pre-school children by the Ministry of Health and Family Welfare.

The leading causes of child deaths, in developing countries are, distributed, respiratory infections, followed by communicable diseases and prematurity (W.H.O. 1976). Similarly, Gulati (1967) found distributed, measles, pnemonia and prematurity as four leading causes of deaths in pre-school children. While Shatty (1981) observed respiratory infections, gastro-enteritis and accidents as leading causes of deaths in early childhood (1-5 years).

Studies, carried out in India by Chandra Shekhar (1972), Srivastava et al (1976) and Ghose (1976); had reported infection, mainutrition, prematurity and birth injury as the leading causes of infant mortality. While Reddain and Nath (1976) observed prematurity (27.7 percent), respiratory infection (21.3 percent), Diarrhocal diseases.

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(12.1 percent), Malnutrition (13.4 percent) and tetanus neonatorum (12.8 percent) as major causes of infant mortality. However, Gupta et al (1981) from rural Rajasthan reported infection (Pneumonia, Diarrhoea etc.) and malnutrition as major killer of infency i.e. 58.8 percent and 19.3 percent respectively. Sufficiently large proportion of infants died due to prematurity (12.9 percent) and natal (9.6 percent) causes. He observed infant mortality to be 124/1000 live births. In a study from rural Lucknow the infant mortality has been assessed to be 117.6 per thousand live births (Shukla, 1981). The leading causes have been tetanus meonatorum (30.5 percent), diarrhoea (18.0 percent) and pneumonia (16.6 percent). Gupta et al (1984) from rural Uttar Fradesh reported major causes of infent mortality in I.C.D.S. area were prematurity and respiratory infections (33.33 percent each), while in Non-I.C.D.S. area, single major cause was tetanus neonatorum (37.5 percent) and major killers in 1-5 years age in 1.C.D.S. area were respiratory infections and marasmus (40 percent) each) while in Mon-I.C.D.S. area these were distripes and marasmus (37.5 percent each).

randon et al (1984) reported in his study 'impact
of I.C.D.S. survey on infant mortality rate in India' that
the I.M.R. (per 1980) was significantly lower (86) for the
1982-85 I.C.D.S. samples survey then for the country as a
whole as provided by the sample registration system (1-14).
Since I.C.D.S. projects are located in socio-economically

backward villages the I.M.R. would be expected to be nigher than the national average in those areas. Indeed a 1978 survey had shown the I.M.R. in backward communities to be 159 (rural) and 90 (urban) compared with national estimates of 136 and 70 respectively.

The level of I.M.R. in I.C.D.S. projects was obvious in Eural and tribal population. The I.M.R. for the Fural and tribal population as calculated by sample registration survey data is 124 compared with 69.5 for I.C.D.S. project.

Tragler (1984) reported in his study 'The role of health worker in an integrated child health programmes in slums' that death rate was reduced from 10 to 7.6/1000 population. Infant mortality was reduced from 132 to 31/1000 live births after three years of programme.

Sunder Lal (1985) reported in his study 'Early childhood mortality in I.C.D.S. Blocks of Nazyana', the infant mortality rate of 107 per thousand, 1 to 3 years mortality rate of 16.26 per thousand, 3 to 6 years mortality rate of 8.08 per thousand.

2.11 INTEGRATED CRILD DEVELOPMENT SERVICES SCHOOL AND CHILD HEALTH

Since the implementation of I.C.D.S. scheme in 1975, various studies have been undertaken to evaluate the impact of these integrated services on the health and nutritional status of children, and have made varying conclusions.

2.11.1 Impact on Protein Emergy Melnutrition

Sunder Lal (1980) carried out a study in a block of Haryana and analysed the impact of 1.C.D.S. on health status of children on the basis of base line survey of 1976 and repeat survey of 1979. Improvement in grade III and IV P.E.M. was observed from 12.09 and 6.10 percent to 5.90 percent and 2.60 percent respectively. Also, in a study (Tandon et al. 1981) of 5 rural, 7 tribal and 3 urban projects, improvement was observed in severe grades of P.E.M. Initially, nearly 20.0 percent of pre-school children from all areas were suffering from severe grade of P.E.M. but due to I.C.D.S. services, the prevalence came down to 11.2 percent in rural areas and also there was improvement in other ereas. Patel (1982) in her evaluation of 1.C.D.S. on pre-school children of urban slums of Bombay noted a tremendous positive effect. A sharp decline in the prevalence of severe grades of malnutrition was observed. Within a period of 3 years. the prevalence was brought down from 15.7 to 4.6 percent.

Contrary to this, Patowary (1982), while evaluating the I.C.D.S. project in Assas could not establish a significant change in the State of Severe Grades of

omin'ny fivondronana amin'ny faritan'ny avondronana amin'ny faritr'i Amin'ny ao amin'ny faritr'i Amin'ny ao amin'ny

malnutrition. However, the percentage of children in normal group which was 44.68 in base line survey of 1979 rose to 54.73 percent in 1980. Grade I malnutrition declined from 36.58 percent to 31.98 percent and grade II from 15.90 to 11.01 percent. Also, Shandari et al (1981) did not find any significant improvement in the grades of P.E.M. during the pariod of one year i.e. from 1978 to 1979.

Domicillary monitoring and management of 170 severely malnourished children in 12 Angenwedi centres showed improvement in 62.35 percent of children during the period of one year (Bhandari et al, 1981). Similarly, Sunder Lal (1982) noticed quite encouraging results as out of 270 severely malnourished children, 58.15 percent improved and 34.45 percent maintained with favourable trends of weight gain.

of P.E.M. was higher in Mon-I.C.D.S. (77.1 per 100) as compared to I.C.D.S. (44.2 per 100) group. Sunder Lai (1983) observed in his study 'Integrated development and growth performance of under sixes in I.C.D.S. project Eathura (Maryana)' that the birth weight were adequate, indicating probably better nutritional status of the mothers. The deficit weight or weight lag started at 6 months of age, which coincides with the opent of weaning. Weight for age of cohort of 969 children born in the year 1977, when it compared with reference standard revealed that 504 (60.27 percent) children were below 'out off point' (80.0 percent

of 50th percentile Harvard Standard). The overall performance of growth was nearly satisfactory in only 39.73 percent of children below one year of age. Sewere growth lag was observed in 27.66 percent of infants. This lag or drop was observed at 6 months of age, which coincided with the weaning period.

2.11.2 Impact on Immunisation status

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Immunisation coverage, which is one of the important component of this scheme has also been observed. Sunder Lel (1980) reported an increase in the coverage of B.C.U. and D.P.T. from 18.20 and 6.70 percent to 48.30 and 69.90 percent respectively during the period of three years. Polio Vaccination which was not given even to a single child in 1976, was found to have been taken by 44.0 percent in 1979. Tandon et al (1981) also noticed remarkable improvement in the immunisation status. S.C.G. coverage showed maximum improvement from 11.3 to 49.2 percent. 20.9 to 55.4 percent and 47.4 to 74.1 percent in rural, tribal and urban projects respectively. Administration of all the three doses of D.P.T. also went up from 6.3 to 17.6 percent in rural, 10.0 to 19.6 percent in tribal and 15.1 to 51.0 percent in urben project areas. Similar results were observed by Patel (1982) in a slum area of Bombay, as the smallpox and B.C.G. coverage increased from 67.4 to 97.7 percent and from 37.5 to 84.4 percent respectively during the period of 3 years. Polic and Triple vaccination also

and the control of th

improved to a considerable extent i.e. from 18.1 percent to 74.2 percent in both types of vaccination.

Bhandari et al (1981) however, did not find much improvement in the immunisation status of pre-school children of Garhi (Rajasthan) during the period of one year. D.F.T. vaccination which was done in 44.29 percent of cases increased to 52.4 percent only. In respect of B.C.C. at the time of base line survey only 25.23 percent were found veccinated, while at the repeat survey only 2.57 percent children were observed further immunised. However, there was much improvement in smallpox vaccination which increased from 76.6 to 89.2 percent. Gupta et al (1984) found higher coverage of all types of Vaccination in I.C.D.S. group as compared to Non-I.C.D.S. group. Coverage for B.C.G. was 14.0 percent in I.C.D.S. and only 2.3 percent in Mon.I.C.D.S. group. D.P.T. vaccine was given to 47.3 percent children in I.C.D.S. and only 4.8 percent in Mon-I.C.D.S. group. 54.3 percent in I.G.D.B. and only 0.3 percent in Non-I.C.D.S. group received oral polic veccine.

2.11.3 Impact on Norbidity

pattern of verious filenesses including nutritional deficiencies in different L.C.D.S. enganwed access but the impact of L.C.D.S. on morbidity has been assessed only by inc perhaps. Patal (1962) has reported definite decides in the incidence of illnesses from 1977 to 1980. Decides in vit. A deficiency, pickets, engaler stomatitie was found

from 4.4, 1.1 and 1.7 percent to 0.7, 0.4 and 0.2 percent respectively. The prevalence of anaemia declined from 15.0 percent to 1.7 percent and similar declining trends were observed in respect of diarrhoes, worm infestation, pyoderma and otorrhis.

Vasudeva et al (1982) have only studied the prevalence of sickness in children below three years of age and found diarrhoes, eye infection, worm infestation, ear infection, U.R.T.I., skin infections, fever, tubercular lymphadenitis as principal causes of morbidity. 64.0 percent were found to be ill at the time of survey. Also Saxona (1982) found 21.8 percent children to be suffering from various Vitemin deficiencies, of which 53.4 percent and 37.9 percent were having Vitamin A and D deficiencies respectively. B-Complex deficiency was seen only in 1.89 percent of the total children. Gupta et al (1984) reported provalence of sickness in higher percentage of children in Non-1.C.D.S. (40.6 percent) as compared to the I.C.D.L. (32.7 percent) group at the time of study. Average sickness per sick child being 1.4 and 1.3 respectively. Upper respiratory treet infections, diarrhoes & dysentery, skin infections and otitis media have been the major causes of sickness in both the groups of children. Significantly higher prevalence of distribute & dysentery and skin infections (15.4 & 10.9 per 100 respectively) has been found in Non-I.C.D.S. as compared to the I.C.D.S. group (10.2 & 4.5 per 100 respectively).

2.11.4 Impact on Maternal and Child Health Dervices

Sunder Lal (1980) observed increase in the frequency of health check up of children below 6 years of age from 28.2 percent to 92.0 percent during the period of 3 years (1976-1979). Similarly utilisation of supplementary and therapeutic nutrition increased from 8.0 percent and 0.0 to 50.0 percent and 97.0 percent respectively. Distribution of Iron and Folic Acid tablets had also increased to 58.0 percent from 2.3 percent. Increase in the coverage of tetanus toxoid was also noticed from 1.0 percent to 30.0 percent.

Cupta et al (1981) reported that 31.54 percent of rural sick children were utilising remedial services of Angenvedis. In emother 1.C.D.S. evaluation study, Tendon (1981) have reported increased coverage of rural pre-school children for supplementary nutrition from 18.7 percent to 57.3 percent during the period of 20-21 months. Similarly, 43.6 percent rural children had received Vit. A supplementation through I.C.D.S. as compared to only 6.0 percent at the base-line survey. Positive changes were noted in antenetal check-up of pregnant women. The base-line study registered a coverage of 11.8 percent for rural area whereas the follow-up study showed a rise to 53.5 percent. The immunisation of pregnant women with 2 doses of tetanus toxoid rose from 2.1 to 33.4 percent in rural projects. Improvements were also noted in the distribution of impa and folic acid (14.1 to 41.1 pergent) and supplementary

nutrition (35.2 to 41.3 percent) to pregnant women.

Postnatal services and distribution of nutritional

supplement showed an improvement from 8.3 and 7.2 percent

to 49.2 and 26.3 percent respectively in the rural projects.

Gupta et al (1984) in his study reported a higher percentage
of children in I.C.D.S. (74.3) as compared to Non-I.C.D.S.

(51.3) group have been utilizing government agencies for

medical care and mothers of significantly more (61.3 percent)

children in I.C.D.S. as compared to only 19.9 percent in

Non-I.C.D.S. group availed antenatal care. Home deliveries

have been common feature in both groups. Coverage for all

types of supplementary nutrition - Vit. A, Iron & Folic acid

and supplementary food, was more in I.C.D.S. as compared to

4.12 INTEGRATED CHILD DEVELOPMENT BERVICES SCHEME AND FAMILY PLANNING

In the initial phase of I.C.D.S. scheme there was no significant emphasis given, direct or indirect, to the family welfare services. It is well-understood and accepted that the health of development of child is very closely related to the birth rate, specing between the deliveries and the total number of children in a family. No child development programme can be implemented meaningfully without introducing family welfare services through its forum. Although the Ministry/Department of Health and ramily Welfare primarily and administratively is responsible

for the family welfare programme, Angenwedi is good focal point in a village from where this programme could be successfully implemented. Angenwedi worker develops and continues to develop a close relationship with all the participants. She can therefore utilize her position to emphasize upon the importance of family planning as well as health of children. She can create interest in the minds of the ladies to know more about featly welfare services, develop right attitude towards family size and practise appropriate family planning methods. Unce the Angenwadi worker has changed the knowledge and attitudes favourably, she can bring the beneficiaries into direct contact with family welfare workers who could then take advantage of this motivation and introduce appropriate measures for family planning. Though pivotal position of Angenwedi worker is important, it must be kept in mind that she is a young girl of the same village and as per Eural cultures she cannot be frank and outspoken on the subject with more grown up women of the same village. The message from Angenwadi worker must be more indirect than direct, particularly refering to importance of healthy child, relevance of specing between the two pregnancies and impact of the family size on the development of the child.

Vacuadhre of al (1983) observed in their study
'Integrated child development dervices - impact on fartility
regulation' a significant increase in family planning
acceptance was noticed after Sive years of implementation

of the i.C.D.S. scheme in the PHCs at Gargeswari and Talkad as against pre i.C.D.S. scheme levels. Further, the increase in the acceptance of family planning methods especially sterilisation in the i.C.D.S. areas was highly significant when compared to that of the control PHCs at Hoskote and S.R. Hundi in the same district Mysore for the same study period.

The study therefore indicates the importance of the I.C.D.S. scheme as a model of health care delivery and the role of its peripheral agent, the Angenwedi workers, as a "change agent" in the utilisation of health care services by the community. It is proposed to study this hypothesis in greater detail by comparing the acceptance of fertility regulation among eligible couples in Angenwedi areas with those in non-Angenwedi areas, as also by comparing family planning acceptance among parents of I.C.D.S. beneficiaries against those of non-I.C.D.S. beneficiaries in some villages of the I.C.D.S. project.

Srinivesen (1983) observed in his study 'India's family planning programms: its impact and implications' the programms has made a significant impact on the festility levels of the population especially since 1966. The crude birth rate was declined only by about 9 points in about 16 years from about 41 per 1000 population in 1966 to 32 per 1000 population in 1968 to 32 per 1000 population in 1962. It has to be realised that the Indian programme is a voluntary programme implemented in a democratic frame-work with freedom of choice on the number of children that a couple would like to have.

There appear to be a wide variation among the states in the efficiency with which the programme is operated and the effectiveness of the programme. The states such as Kerala, Maharashtza, Tamil Wadu and Orissa appear to have been more successful in implementing the programme. The success seems to be related to organizational efficiency and the quality of various services provided including maternal and child health care rather than to differences in the desired family size among the states. There appears to be a strong linkage between the success of programmes to reduce infent and child mortality levels and acceptance of family planning methods. In the recent years there appears to be a shift towards increased acceptance of female methods particularly laparoscopy, Copper-T and oral pills and this reflects the growing demand from women for controlling their family size.

It appears that the states which are backward in the programme in India can gain considerably from the experiences from those which have been more successful, by visits by officials, study tours and exchange of officials on short term basis.

Shattacharjee (1934) reported in his study 'The family planning programme, education and development' in Karnataka, the crude birth rate of Karnataka has been estimated to have declined from 39.0 to 34.8 during the last decade. This decline is birth rate on mainly be attributed to the performance of family planning programme

over time and increases in the level of education have often been cited as one of the most significant factors influencing fertility reduction.

Chaurasia (1985) reported in his study 'Organizational aspects of family welfare programme in India' that the trends in the organizational efficiency of the programme has had many ups and downs. This is mainly because the policy of polarisation adopted in our family planning programme, drifting from one solution to another, as such offered an insufficient remedy. Very little attention has so far been paid to such aspects as mass education, research and training.

CHAPTER III

3. MATERIAL AND METHODS

This is a comparative study of evaluation of I.C.D.S. (Integrated Child Development Services) Scheme in two Community Development Blocks - one covered by Integrated Child Development Services Scheme and the other not covered by it.

3.1 AREA OF STUDY

Thensi in Utter Predesh, where Integrated Child Development Services (I.C.D.S.) Scheme was started in 1980-81 was selected as the I.C.D.S. block in this study. This block is also the Field Practice Area of the Department of Social and Preventive Medicine, M.L.B. Medical College, Jhansi (U.P.). The Chirgeon block has got a typical rural setting, representing truely the rural population of Bundelkhand in terms of their culture, beliefs, customs and medical facilities etc.

The Hon-Licks, block to which study was carried out for comparison is community Development block. Beregade.

This Block was selected because this is edjected to Chirquen slock as a control to Chirquen slock as a control belief the control of chirquen area success some study at a charter to that of Chirquen area success some state and chirquen area success some state and chirquen state success some state and chirquen area success some state and chirquen state success some success some state and chirquen state success some success some state and chirquen state success some success some state success some state success some state success some succes

Chirgaon is a birth place of famous national post Late Sri Mathilisharan Supta and this block is at a distance of 10 Kms. from Parichha Thermal Power Project. It is situated at a distance of 30 Kms. towards east of Jhansi. The geographical area of Community Development slock Chirgaon is \$5255 hectars constituting mainly of padua soil which is suitable for wheat. The average yearly rainfall in the area is about 70 cms.

There are 102 villages in this block. According to 1981 census, the total population is 108561. The demsity of population is 1.96 / hectar.

There are 94 primary, 27 junior and 4 high schools besides one Intermediate College, in this area. The literary rate is around 29 percent. Agriculture is the main occupation and 75 percent of the total geographical area is under cultivation.

Regarding the health infra-structure, there is
three Agurvedic hospitals and four State dispenseries
(allopathic) apart from one Primary Health Contre at
Chirgeon. There are three Medical Officers posted at the
Contre.

Community Development Block Baragaon is situated at a distance of 15 kms, east of Chansi district. The geographical area of Community Development Block Baragaon as about 42660 heaters constituting mainly pages soil

which is suitable for wheat & pea. The everage yearly rainfall in this area is also about 70 cms.

There are 121 villages in this block. According to 1931 census the total population is 103373. The population density is 2.42 / hectare. The main occupation in this area is agriculture and about 80 percent of total geographical area is under cultivation.

At Baragaon there is three Ayurvedic hospitals and four state dispensaries (alloyathic) apart from one Primary Health Centre.

There are 72 primary, 17 junior and 6 high schools and one Intermediate College in this area. The literacy rate is around 36 percent.

3.2 STUDY DESIGN

3.2.1 Unit of study

All the children below the age of six years in all the households of the selected villages constituted the unit of studys

3.2.2 Sampling Unit & Prame

Josephing Rode in the Study was a Village. The sampling frace consists of a list of all the 102 Villages in Community Devolopment State Chirages (1-C-D-0-) and All the 121 Villages of Community Devolopment Block Decognosis

3.2.3 Sample Design

The main objective of this study was to assess the impact of the I.C.D.S. scheme on the nutritional status of children below 6 years. Average reported prevalence of moderate to severe grades of protein energy malnutrition comes to about 10 percent of the children below six years and this was used to determine the size of the sample required in the two areas.

The formula for minimum sample size required is given as

P - Percent prevalence expected.

Q = 100-P and d is allowable percentage deviation in P Assuming d = 5% (25% of 30%) the required sample size comes to $n = \frac{4 \times 30 \times 70}{305} = 336$

It was decided that three villages in each block would be adequate to cover this number of children.

The selection of the villages in each block was done by simple rendom sampling method using table of random numbers (Fisher & Vater, 1957).

The VALLeges selected and their random numbers
are as \$11000.

**

. 44 67 68 44

12 (2.6, 6,8,1)

Chirason block	Random No.	Baragaon block	Randon No.
1. Pahari		1. Pichhore	
2. Maheba	37	2. Gora Machhiya	43
3. Mirona	62	3. Digera	69

3.2.4 Sample size

The sample consisted of all the children below six years of age in the selected villages. Anganwadi workers maintains the family records of their villages in Chirgaon block. Family records of selected villages were verified and made upto date by making necessary alterations and additions. The records were re-verified at the time of study. There were 506 children below six years in the selected villages of Chirgaon and 499 children in Baragaon block. Out of these, 423 (83.60 percent) children in Chirgaon block and 403 (80.76 percent) in Baragaon block could be studied. Village-wise distribution of the children is given in table 3.1.

Table 3.1. Village-wise distribution of population studied.

<u>Chirquen Block</u> -

51. 80.	Hame of Village	SOLAL POPUL LATION	Total chil- dren below 6 years.	Total children studied	Percentage of children studied
1.	Pahazi	1701	200	232	0.40
2.	Matholia ************************************	450	' (80.88
3.	Marcala (***	920	140	100	85.44
	Total	3000	506	423	93.60

Baragaon Block -

\$1. No.	Name of village	Tot al popu- lation	Total chil- dren below 6 years	Total children studied	Percentage of children studied
1.	Fichhore	820	225	204	90.66
2.	Gora Hachhiya	662	118	98	74.26
3.	Digera	1050	156	101	64.74
	Total	2532	499	403	80.76

non-evailability of the children or non-cooperation from the parents despite best efforts of the investigator.

3.3 PERIOD OF STUDY

The Study was started on November 1, 1987 and continued till April 30, 1988.

3.4 METHODOLOGY

to every house in selected villages of L.C.D.S. and Mon-I.C.D.S. area. All the children below the age of all years were studied with the help of a schedule designed to collect heats informations pertaining to bio-social characteristic, sevimonsmital conditions, entenetal care, type; and place of dalivery, birth attendent, feeding proctices, growth and development, insunisation status, past and present like account the past and present.

interviewed. If neither of the parents was available, some other adult member of the family was interviewed and a re-visit made to verify the facts. The informations were recorded on an interview schedule which had earlier been tested on a similar population.

3.4.1 Determination of age

Actual age of the child was recorded in years and months. Since the study population was only upto 6 years, there was not much difficulty in determination of age in years. Determination of age to nearest month posed some problems. Stated age was verified indirectly by asking about the month of birth according to the local calender, proximity to some festival or important event or horoscopes, if available. Relative ages of the mother and other children were also taken into account during verification of age.

3.4.2 Anthropometric measurement

3.4.2.1 Measurement of weight -

approced weighing machine provided by UNICEF was used for recording the weight of children. Its accuracy was checked delly with standard weights through infarior to been type scale. This machine was used because of (a) It is easy to carry in the field end (b) for uniformity of checkedians when children had to be weighed with their machines.

Children were weighed to the nearest 0.1 kg with only light or no garments. Weighing of smaller or sick children was a difficult task. They were weighed along with their mothers and then the mother's weight was deducted to know the weight of the child. The children were weighed preferably before meals and eaked to empty their bladders before weighing.

3.4.2.2 Heasurement of Height -

For older children who were able to stand, were asked to stand with bare feet on a flat floor against a wall with feet parallel and with heals, buttocks, shoulders and back of the head touching the wall. The head was held comfortably errect and a mark made on the wall with the help of a scale, touching the top of the head horisontally with its vertical edge flat against the wall. Neight was then measured by using a good steel measuring tape to the nearest 0.5 cm.

To stand, height of rether length was accounced by laying the child on a flat was accounced by laying the child on a flat was accounted by laying the process and fact was accounted by applying them process and fact was accounted by applying the fact was accounted by applying the fact was accounted by a process accounted by a process

3.4.3 Clinical examination

child was subjected to a complete general and systemic examination. The objective was to discover any illness or any sign of malnutrition as enumerated by w.M.-. (1976).

3.4.4 Laboratory Investigations

Blood samples were collected for haemoglobin optimation which was carried out on the spot by Sahli's acid haematin method.

of ove and cysts of parasites in the feeces. For collection of stool samples serially numbered small boxes were distributed to the parents after clinical exemination and sample collected next sorning. Examination of feeces was done by preparing fresh saline and indine smears and viewing them under the high power of a microscope.

3.4.5 Compilation, Tabulation and Interpretation of Collected Data

3.5 LIBITATION OF STUDY

This study had been carried out in partial fulfilment of the requirements of M.D. (Social and Freventive Medicine) Examination and therefore suffers from limitations of time and resources. Many of the information sought are based on the capacity to recall, the limitations of which do not need any emphasis.

The reluctance on the part of parents in giving the blood and stool samples of the children proved a great difficulty in the course of study. Inspite of the best efforts made, such samples of all children could not be obtained.

CHAPTER IV

OBSERVATIONS

A total of 423 children from 1.C.D.b. Block (Chirgeon) and 403 of Non-1.C.D.b. Block (Baragaon) of district Jhansi, aged under 6 years, have been examined and investigated to evaluate the impact of 1.C.D.b. scheme. Information collected and observations made in the course of study are presented herewith.

4.1 ACE AND SEX DISTRIBUTION

Table 4.1 : Distribution of Children by their age end Best.

		1,0	.D.6	. ORG		de describitorios		HOI-	C.D.	b. UK	W.E.	No. Serve region of the principles.
Ag e	- Announce	ale	Andria del Barraca de La caraca	nele		tal_		ale_	100	1916	To	<u>tal</u>
	No.		No.		No.		No.		Ho.	**	No.	*
/ 3 months	14	3.3	10	2.4	24	5.7		3.3	•	1.5	15	3.7
3 - 5 months	11	2.6	12	2.0	23	5.4	11	2.7	33	3.2	24	5.9
6 - 8 months	9	2.1	13	3.1	22	5.2	15	3.7	13	3.2	23	6.9
9 - 11 months	•	0.7		0.7		1.4	1.5	3.7	7	1.8	22	5.5
1 year+	40	9.5	25	0.1	66	15.6	20	5.0	25	6.2	45	11.2
2 years+	41	9.7	34	8.0	75	17.7	•0	9.9	24	6.0	64	15.9
3 years+		9.7		8.9	78	18.4	67	11.7	30	9.4	85	21.1
4 years+	30		37	0.0	75	17.7	30	7.4	29	7.2	50	14.0
5 years+	23	6.0	25	3.43	54	12.0	20	7.0		0.2	61	35. 3
rotat	226	11.2	1.7	74.6	423	MA C	215	53.3	100	46.7	403	100.0

of the total children studied, lowest proportion in i.c.D.b. group (1.4 percent) were in age group 9-11 months and in age group \angle 3 months in Non-I.C.D.b. group (3.7 percent). The variation according to the age of children in the 1.C.D.b. and Non-I.C.D.b. group has not been statistically significant ($x^2 = 9.66$, d.f. = 8, p = 70.05).

In I.C.D.S. group, 53.4 percent children were male and 46.6 percent female, and 53.3 percent male and 46.7 percent female in the Non-I.C.D.S. group. But the difference was statistically insignificant ($x^2 = 0.0008$, d.f. = 1, p = 7/0.5).

4.2 PANILY BACKGROUND OF STUDIED CHILDREN

4.2.1 Religion & Caste

Table 4.2 : Distribution of children according to religion and casts.

Religion and Caste	No.	SACROUNE	Bon-I.C.D.	
Line	408	98.0	401	99-5
- Higher costs				
- Backward caste				
- Schedule Casto	gidilitis .			
malla : ; ; ; ; ; ; ; ; ; ; ; ; ; ; ; ; ; ;	.	5.0		0.5
	423	100-0	403	100.0

both the study areas. Majority of children in i.C.D.b. (95.0 percent) as well as in Non-I.C.D.b. group (99.5 percent) were belonging to Mindu religion. However, the variations in the religious composition of I.C.D.b. and Non-I.C.D.b. groups has been statistically insignificant (X² = 1.95, d.f. = 1, p. 7 0.05).

Nearly three-fourth (83.2 percent) of the total children in I.C.D.S. as well as Non-I.C.D.S. groups (73.4 percent) were from the backward and schedule castes.

4.2.2 Nature of femily

Table 4.3 : Distribution of children according to nature of family.

Passily ty	I.C.D.B. No.	Group K	Non-1.C.D.) • (GROUN) 18
Joint	200	70.0		62-3
Bucles	.27	30.0	152	37.7
Total		100.0	403	100.0

To o percent children in Z.C.D. group and 62.3 percent children in Z.C.D. group and 62.3 percent children in Z.C.D. group and 62.3 percent children in both the groups have been from children in both the groups have been from t

4.2.3 Size of the family

Table 4.4 : Distribution of children according to family size.

no.of family members	No.	% Group	No.	s. Group
3 • 4	43	10.2	52	12.9
5 - 6	119	20.1	149	36.9
		18.0	00	19.9
9 - 10	84	15.1	41	10.2
11 and above	111	2.7		20.1
Total	423	800.0	403	100.0

The largest number of children were belonging to the families having 5 - 6 members both in I.C.D.S. and Non-I.C.D.S. Study groups (20-1 and 36-9 percent respectively). 27-7 percent children in I.C.D.S. group and 30-1 percent in Non-I.C.D.S. group to the families of 11 and norm members. Sowers: these differences were found statistically significant (22 at 15-25, defe = 42-7 (2-0-05).

the and could be a superior to the contract of



4.2.4 Per capita monthly income

Table 4.5 : Distribution of children according to per capita monthly income of the family.

Social		•	Non-I.C.D.E.Group		
class	30,		MO &		
			•		
***	67	11.1	124	30.8	
10	223	52.7	187	46.4	
V	247	34.8	96	21.3	
			403	100.0	
	class II III		Class No. % II		

Families having per capita monthly income of a. 60 - 139 both in I.C.D.S. and Non-I.C.D.S. study groups (52.7 and 46.4 percent respectively). No child belonged to social class I (8. 600 and above) in both the groups. Children were found to be from the families having per capita monthly income of below 8. 60. both in the I.C.D.S. and Non-I.C.D.S. groups (34.8 and 21.3 percent respectively).

4.2.5 Literacy status of the parents

Table 4.6 : Distribution of children according to literacy status of the parents.

Literacy status	STATE OF THE PARTY	1.C.D.S. Group				m-1.C.D.	Hother
	<u>Father</u>			Mother No. 16		<u>Kinek</u>	***
					NO.		
111iterate	149	35.0	345	31.6	227	56.3	353 87.6
Primary	70	16.5	49	11.5	67	16.6	30 7.5
Middle and	205	40.5		6.9	109	27.1	20 4.9
Total	423	100.0	423	100.0	403	100.0	403 100.0

and mothers of 61.6 percent children were illiterate. In

Hon-I.C.D.S. group. Sother of 56.3 percent and mother of 87.6

percent children were illiterate. However, these differences
percent children were illiterate. However, these differences
in the educational status of fathers and mothers in the two
proups were not found statustically significant (* 4.57)

are a 7 0.05 and 2 5.79, d.f. 2 7 0.05

4.2.6 Hain occupation of family

Table 4.7 : Distribution of children according to main occupation of the family.

Main Occupation of the family	And the second s	S. Group	Non-I.C.D.S. Group		
II WIE EMBEN	No.		MQ .		
Agriculture	283	66.9	272	67.5	
abour	34	8.0		10.7	
ervice	**	7.6		6.9	
maines	**	2.6		4.0	
)thers	63	14.7		10.9	
lot el	423	100.0	403	100.0	

The main occupation of family of 66.9 percent children in Lc.D.S. group and 67.5 percent in Non-L.C.D.S. group were found agriculture. However, the differences in the occupational status of familias in the two groups were found statustically not significant (2 1.05, 0.1. 1.7).

in the same of the state of the state of the same of t

4.3 ENVIRONMENTAL COMDITIONS

4.3.1 Water supply

Table 4.8: Distribution of children according to source of water supply.

		ter suppl	. 10.	*	No.	%
)p e n	shallow	wells	324	76.6	349	86.6
Hand	pump			23.4		13.6

In I.C.D.S. group only 99 (23.4 percent) and in Non-I.C.D.S. group 54 (13.4 percent) children were using safe water supply. This difference was statistically significant $(x^2 = 13.22, d.f. = 1. P \angle 0.001)$.

4.3.2 Excreta disposal

Table 4.9 : Distribution of children according to methods of excrete disposal.

Methods of disposal	I.C.D.S. Group	Non-L.C.	8.5.6mm.
Senitary (P.R.A.I.	. 16 . 3.8		
Insanitary (Others)	407 94-2	403	100.0
Total	423 100.0	403	100-0

Senitary disposal of excrete was seen only in less percent of children in the L.C.D.S. group and not seen in Mon-L.C.D.S. group.

4.3.3 Housing

Table 4.10 : Distribution of children according to housing condition.

Housing condition	_LeCeD	& Group	Mon-1.C.D.S.Group			
noderny condition	No.	*	HO.	*	A-	
invironmental surrounding of the house						
Hygienic	130	30.7	88	21.9	3. 57	Z0.00!
Unhygienic	293	69.3	315	78.2		74.44
yer-crewding :						
resent.	273	64.5	270	67.0		70.05
Abs ent	150	35.5	133	33.0		
(entiletion :						
Moguate	102	24.1	•	20.8		70.05
in adequate	321	75.9	319	79.2		,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,

Locality of house was found hygienic in 30.7 percent
in I.C.D.S. group and only in 21.8 percent of the Non-I.C.D.S.
group and this difference was also found statistically
significant.

of over-capading and ventilation in the 1-C-D-S- and Non-1-C-D-Sgroup.

4.4. PREGRANT & LACTATING WOMEN AND PARILY PLANNING SERVICES

4.4.1 Pregnant women

The Carry All Market Land

Table 4.11 : Antenatel care evailed by pregnant women.

Antenatal	I.C.D. Duratio	Non-1.C.D.S.Group (n=19) Duration of								
care availed	pregnan (weeks)		20-	*	pfogr (wee)			Total	Total %	
	10-14 10-14	24-36 100-36	- tal		10-) No.	4	25-36			
Tetenus toxoid immuni- mation:										
	6 19.4	4 12.9	10	32.3	2 10	.5	1 5.3		15.8	
•	2 6.5	8 25.8	10	32.3		3.3	2 10.5		15.8	
I r on é Eoli e acid			13	41.9					15.0	
Medical :heck-up			13	41.9				3	15.6	

yillages only is prognant women could be contacted. Thirteen
(41.9 percent) prognant ladies in I.C.D.S. and 3 (15.8 percent)
in somelicipals group utilised antenetal services in the form
of medical character and iron a folic acid tablets. Tetanus
excold was given to 32.3 percent prognant women in I.C.D.S.
excold was given to 32.3 percent prognant women in I.C.D.S.

4.4.2 Lectating women

Table 4.12 : Postnatal care availed by lactating women.

Postnatal	111	C.D.S.	Group	(n=109)	Non-I.C.D.	S.Group(nel26)
care availed	Contribution of the contri	Ho.			No.	*
Iron & folic acid				13.7	49	36.9
Mealth check-up		89		12.7	49	38.9

Lactating women availed postnatal care in respect of \$1.7 percent in I.C.D.S. group and 38.9 percent in Non-I.C.D.S. group by taking iron & folic acid and utilizing health check-up facility.

4.4.3 Family planning services

Table 4.13 : Family planning services evailed by target couples.

Type of femily planning	I.C.D. (n=)	6.6xoup 15)	Mon-I.C.I	
Service William	1804	<u> </u>		
(1) Spacing methods (
(a) Barrier Methods (condom)		11.1		9.8
(b) Zatra-utorino derices (Cu-T)	30	6.3	30	4.4
(a) Hormonal Methoda (ozal pille)	30	9.8		1.7
(2) Terminal methods :				
(a) hale sterilization (vanestony)		0.6		0.4
(b) Female Sterili- sation (tubectomy)	***	199		•
roted	3.28	39.6	43	18.7

For the utilization of family planning services,

315 target couples in I.C.D.S. area and 230 in Non-I.C.D.S.

area could be contacted. 39.6 percent couples in I.C.D.S.

and 18.7 percent in Non-I.C.D.S. group were using one or other method of contraception.

percent of male and 12.1 percent of female in I.C.D.S. group and 0.4 percent in male and 6.9 percent in female in Non-I.C.D.S. group. The women using Cu-T for family planning were 6.3 percent in I.C.D.S. group and 4.4 percent in Non-I.C.D.S. group. Oral pills were taken by 9.5 percent in I.C.D.S. group and 1.7 percent in Non-I.C.D.S. group. 11.1 percent couples in I.C.D.S. group and 5.3 percent in Non-I.C.D.S. group were using condoms.

Table 4.14 : Distribution of terminal methods of femily planning according to number of children.

	-		L.C.D	S.CEOUL_	_159	l-LaCa	O.O. GEOU	P.
	OI.	children	No.			HO.		
	3			20.0		•	17.7	
	•	\$2.462.78 (\$12.12 4 7.12).4	12	30-0		•	29.4	*****
	•	way Labasi (1888)		40.0			27.0	
•	4	477		440		•		
	·ta		40	100.0	englik jaro is Kanada sakas	17	100.0	

Mone of the couple in I.C.D.S. as well as in Non-lec.D.S.
group was startlined actor the two children. startman aumber of
startlined couples (10.0 percent) in I.C.D.S. group were having
schildren. Maximum number (35.3 percent) of couples in NonI.C.D.S. group were having 6 or more children.

4.5 BIRTH ORDER

Table 4.15 : Distribution of children according to their birth order.

	I.C.D.	. Group	Non-L.C.	D.S. Group
irth order	80.	*	10.	*
	96	23.2	108	26.8
2011 1012 1312 1314 1315 13	133	31.4	93	22.6
11.1	103	24.3	93	23,6
	51	12.1	63	15.6
	21	5.0	26	6.4
	12	2.8	11	2.7
VII and above		1.8		2.3
Total .	423	100.0	463	100.0

In I.C.D.S. group, maximum (31.4 percent) number of children were belonging to birth order II, while in Non-I.C.D.S. group, maximum (26.6 percent) were of the birth order I. There were higher (54.6) percentage of children of birth order I.E. II. In I.C.D.S. group as compared to 49.4 percent in Non-I.C.D.S. group. However, these differences were statistically not significant (3. * 11.26; c.f. # 6, 2 * 7 0.05).

Table 4-16 : Metribution of mem weight of male children by their age.

						0(86-218)				(1972)
									Selent Coor	
	3	3	3			8	3	70.05		
	1	3	3	1	3	8	8:4	70.05	5	1.1
	•	3	Ş		3	8		70.05	3	7.13
	•	?	3	•	•		1.92	70.05		1.2
•	8	:	3	8	3	3:	3.46	70.02	***	1.73
·	•	3	3	•	:	1.26	0.00	10°07	10.2	1.80
•	3	10.0	1.42	•	10.2	1.2	2.14	80.07	11.0	2.0
i	2		1.72	•		7	3.70	70.07	9.3	2.97
	a	9.77			12.0	1.40	50.7	50.0	14.0	6.4 6.4 6.4 6.4 6.4 6.4 6.4 6.4 6.4 6.4

aignificent in 0-1 year of ago. Weight of the children in buth the groups were houve at. less group in all ages but the difference was statistically significant from 1 to 5 years and not Children in L.C.D.S. group had higher value for weight as compared to hon-L.C.D.S. then L.C. Staffs in all appear.

4.17 . Matribution of mean weight of female children by their age.

			-197)		30-1-C. D.5. GEOUGO (D-198)				2(37)	(1972)
	1					.			Modern Constitution of the	3
	3		3			5	8	10.05	**************************************	7.5
-S wonthe	2	•	3	4	•	9.0		70.05	3	0.00
	3	3	3	3	3	8:	3	70.05	7	0000
	••	3	3			3	8	70.05	•	~
1	8		3	*	ď	8:3	2.33	50.07		3.1
ł	3		3	*	:	8	3.23	10.07	9	7.03
•			3			2.032		70.07	7.5	1.96
į		:	3		7	2.19	3.16	70.02	12.9	2.13
	*	3	3	•		3		50.07	16.5	2.33

Weight of the female children was higher in L.C.D.5. group, in comparison to Non-L.C.D.5. group in all age groups and this difference was statistically significant from age groups 1 to 5 years but not significent in 0-1 year age group. seight of the children in both the groups were however, less than L.C.M.R. Standard in their respective groups.

Table 4.18 : Distribution of mean height of male children by their age.

									L.C. M. R. (1972)	. (1972)
		ij							(Case)	4
S months		3	3			8	3	70.05	*	8
ł	1	i	3			•	3	70.05	62.7	3
	•	3	i			3	8	70.05	3	9
	•	i	•	2	3	***	3	10.08	8	8
	\$;	3	8	•		3	70.05	000	3
•		:	ŝ	\$	*	6.3	8	70.05	3	5.32
•		3	Š	\$:	7	***	70.08	6.00	3
i	8		8		3	***	99.	10.07	0.96	6.5
		:	;	3		9	1.52	10.08	102	0000

Mon-I.C.D.S. group in the age group 4+ years only. Comparing where observations with I.C.H.N. it is revested that the mean height in both the groups in all ages has been lower than that Height of male children was significantly higher in L.C.D.S. group as compared to

Observed by LetaineR.

Table 4.19 : Distribution of height of female children by their age.

(1972)	3.3	3		3	8	8	5.39	**	6.35	
L.C. K. R. (1972)		55.0	6.09	3	3	2.0	8	6	94.0	101.4
		80.07	70.05	70.05	70.05	70.05	70.05	\$0.07	10.07	10.00
*		8	3	8	3	***	3	2.03	8	
			89.		\$	8:	8	8	3	6.32
Non-1.C.D.S.Group(p=188)		8		3	*		3	Š		
							***	8	8	
		3	i			3	;	3	3	3
		3	3	3	i	:	??	3	3	\$
	ě	8	4	2	•	8		R	•	*
						:				Å

in all ages hat the difference was statistically significant only in those, eged No 4- years. Penale children were comparatively less tall in Non-L.C.D.S. group then L.C.D.S. group All the values for height in both the groups were less as compered to the L.C.h.R. Standards.

4.6.3 Weight-Height Index

Table 4.20 : Distribution of weight-height index of children.

	_L.C.D.b	Group	Non-L.C.D.	b. Group
A43 0	Male	Yeme) e	Nale	Fenale
∠ 3 months	0.152	0.150	0.151	0.150
3-5 months	0.159	0.154	0.153	0.156
6-8 months	0.151	0.150	0.144	0.142
9-11 months	0.169	0.151	0.142	0.144
1 year +	0.159	0.144	0.144	0.133
2 years +	0.144	0.142	0.133	0.130
3 years +	0.149	0.149	0.143	0.140
4 years +	0.157	0.152	0.152	0.150
S years +	0.154	0.153	0.150	0.147

The index has been assessed by Height (kgs) x 100

Value (0.15 was considered as below normal. Upto 6 months of age, children in both I.C.D.S. and Non-I.C.D.S. groups were found to be normal according to this index. Nowever, after 6 months, children in Non-I.C.D.S. group showed lower index is all me groups except in ages 44 years and S. years in I.C.D.S. group, however, children only at age of the years in I.C.D.S. group index of the years in I.C.D.S. group, however, children only at age of the years index below normal index in both sense and female children is not been as and female.

PLANSON OF DEVELOPRENT

*** Hear age of achieving mile stones.

	ŝ				Modern Book (Modern Book)		***	
	8							
3								
			:				7:2	70.05
	3		***	S		::3		80.07
	*		1.22	7	21.5	7.3	13.00	
		3	8	3	6.5	1.72	3:6	70.00
	â	:	3	ð	:	2.05	14.67	70.001
	8	;	2.50	3		3	3	100.00

found statistically algolificantly delayed in Non-LeCabab. group as compared to the Lecabab. LeCababa group (6.5 & 7.5 months respectively) and in Non-1.C.D.S. group (4.5 & 7.4 months Proportionly). Other alle stones - Creeling, Stending, valking, testhing and talking were There was no significant difference in ettainment of head holding and sitting in

rable 4.22 . Free alence of malmutrition.

	1.C.D.S.Group (n=423)	Covery on	Mon-Lic. D. C. Croup (n=00)	
		3440/200		East 4.100
				62.
				5
				•
			12 (mas 32)	
				9.15
				3
ther deficients				

At was 82.1 percent in Enn-L.C.D.b. group. This difference was highly significent (2 = 4.88. P. Co.01). Noverver, providence of severe grade of P.L.H. (Grade 111 & IV) was 6.2 per 100 Feedleries (1972). Overell provelence of P.L.K. in L.C.D.S. group was 67.6 percent, while Protein mostly helmitition was classified as recommended by indian Academy of In I.C.D.S. group, whereas it was 6.6 per 100 in the Non-I.C.D.S. group of children There was significant difference in the prevalence of Vit. A deficiency in I.C.D.S. (0.7 percent) and Non-I.C.D.S. (4.0 percent) group (2 = 3.26, $P \angle 0.01$). Difference in the prevalence of angular stomatitis was not however, significant statistically (2 = 1.20, $P \angle 0.05$).

out of 423 children, 353 (83.5 percent) in 1.C.D.S.
group, and out of 403 children, 332 (82.4 percent) in NonI.C.D.S. group could be investigated for Mb. estimation.
Children having Mb. 10 gms. percent and above were considered
normal while others amaemic. There was significant difference
in the prevalence of amaemia between I.C.D.S. (19.3 percent) and
Mon-I.C.D.S. (31.6 percent) groups of children (2m4.45, P \(\subseteq 0.01 \).

4.9 IMMUNICATION

Table 4.23 : Immunization status of the children .

Immunised with		6. Group :423)		.C.D.S. (n=403)		
	20.		Ho.			and the second
B.C.G. Veccine	114	27.0	98	23.6	1.12	70.05
D.P.T. I	39.6	50.9	167	41.4	3,42	۷٠,01
***	112	26.5	40	11.9	5.44	<u>_0.01</u>
	80	19.9	32	7.0	4.71	<u>_0.01</u>
	20	2.4	3	0.7	1.90	70.05
POLE STORY SANGERS		50.0	167	41.4	3-42	<u> </u>
	113	24.5	40	11.0	5.44	40-01
AND CONTRACTOR OF THE PROPERTY	80	10.0	32	7.0	4.71	₹0.01
Set a sep a tio	40	2.6	14 14	0.7	1.90	70.05
Vestles	127	30.0		2.0	12.04	<u> </u>

B.C.C. was received by 27.0 percent children in 1.C.D.L. group and 23.6 percent in Non-1.C.D.L. group.

I, II & III doses of D.P.T. and volio were received by \$8.9.

26.5 and 18.9 percent children respectively in 1.C.D.L. group.

Corresponding figures for Non-1.C.D.L. group of children were

41.4, 11.9 and 7.9 percent respectively. 2.4 percent children in 1.C.D.L. group and only 0.7 percent in Non-1.C.D.L. group received booster dose of D.P.T. and volio vaccine. In Non1.C.D.L. group, only 2.0 percent children were given measles vaccine while in 1.C.D.L. group, 30.0 percent had measles vaccine to B.C.G. and booster doses of D.P.T. a Polio vaccine.

4.10 MORBIDITY

Table 4.24 : Morbidity in the children at the time of study.

Diseases		D.S.Group p#423)		-1.C.D.B.		
	no.	Ra te/1 00	No.	Rete/100		
Upper respiratory tract infections	40	9.3	62	15.4	2.59	۷۰.01
Diarrhoes & Gysentery		12.1	76	13.9	2.71	∠0.01
Perez	31	7.3	50	12.4	2.44	۷.05
Skin diseases	•	1.4	11	2-7	1.32	70.05
otitis media		0.5	7	1.7	1.44	70.05
Sye diseases	•	0.9	7	5.7	0.98	70.05
Others	•	1.4	7	1.7	0.37	70.08
Total Spalls	140	33.1	220	94.9		

In both the groups, upper respiratory tract infections and diarrhoes & dysentery were major causes of sickness. There was significant difference in the prevalence of dierrhoes and dysentery in 1.C.D.L. and Non-I.C.D.B. groups, i.e. 12.1 per 100 and 18.9 per 100 children respectively (2 = 2.71, P / 0.01). Skin diseases were found in 6 (1.4 per 100) children in I.C.D.S. group while it was approximately double in Non-I.C.D.L. group (2.7 per 100). This difference was found statistically insignificant (2 = 1.32, P 7 0.05). Other diseases included fractures of femur bone, marasmus and lower respiratory tract infections, chicken pox. There were 3 cases of polionyelitie in I.C.D.B. and two cases in Mon-I.C.D.D. area. Hean spells of sickness per 100 children was 33.1 in I.C.D.S. group as compared to 34.5 in Mon-I.C.D.S. group.

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Table 4.25 : Overall morbidity in children at the time of study

Age &	Children Studied	1.C.D.S.Group Sickness		Children Studied	Non-1.C.D.L. Group		
		No.	%		No.	*	
_ 1 year							
Male	37	5)	13.5	50	18)	36.0	
Femals.	34	12 22.7	31.6	30	21 43.8	53.9	
1 year :							
Male	40	10]	25.0	20	10)	50.0	
Female		13/34.9	50.0		13}51.1	52.0	
2 years :							
Male	41	12) 37.3	14.6	40	20 59.4	20.0	
Female		16}37.3	26.5	24	30 3 an	50.0	
3 years :							
Male	41	9 29.2	29.3	•	23.5	30.3	
Female	"	9329.2	43.2		15}20.0	52.6	
years :							
Male	30	10 29.3	27.0	30	12 39.0	36.7	
Female	37	12,20.3	32.4		12)""	41.4	
5 years :				항 기계 1시			
Mele		. 24.1	20.7	20	12 41.0	42.9	
Penale	25		28.0			39.4	
Potal :	e salas per a salas y e	interest				100	
Kale .	226	40]	21.7	21.5	01,41.6	35.8	
Pemale	197	jz7.9	35.0	100	915***	40.4	

In the L.C.D.S. group 27.9 percent children and in Non-L.C.D.S. group 41.6 percent were sick at the time of Study and this difference was statistically significant. The available sickness per sick child in the 1.C.D.5. group and Non-1.C.D.5. group were 1.2 and 1.3 respectively.

Percentage of sick children was higher in Non-1.C.D.S. group as compared to the 1.C.D.S. group in all ages. Percentage of sick children in aged 1 - 2 years in both the groups were highest. There was no significant difference in the prevalence of sickness between males and females in both the groups $(x^2 = 0.125, d.f. = 1, P.70.5, x^2 = 0.018, d.f. = 1, P.70.5)$.

Table 4.26 : Worm infestation in children at the time of study.

Parasite		.D. GEOUD_	Non-1.C.S	.5. Group
Mcerls		26.6		34.2
Ankylostoma		1.5		1.0
thers		2.5		
lone	137	69.2	100	60.9
	100	100.0	202	100.0

coly 193 (66.6 percent) stool samples in I.C.D.S. group and 203 (50.1 percent) stool samples in Non-I.C.D.S. group could be collected and examined for ove and cyst. In I.C.D.S. group 61 (30.6 percent) and in Non-I.C.D.S. group 79 (30.1 percent) samples were positive for one or the other percents. This difference was not significant (2.0 3.0), d.E. - 1, F 7 0.05).

The second section is a second section of the second section of the second section is a second section of the second section of the second section is a second section of the second section of the second section is a second section of the sec

Ascaris was found to be the most common parasite in the I.C.D.S. (26.8 percent) as well as in Non-I.C.D.S. groups (34.2 percent).

4.11 PERSONAL HYGINE

Table 4.27 : Personal hygiene status of the children.

ersonal	hygiene	_1.C.i	48 • Group %	Non-Le	.D.E.GROUD
		42	9.9	24	6.0
			44.0	201	69.7
		423	100.0	403	100.0

Level of parsonal hygians was appassed on the basis of the oritories adopted. 44.0 percent children in I.C.D.A. and 69.7 percent in Non-I.C.D.A. groups were having poor personal hygians. Difference in the personal hygians status of children between these two groups was highly significant in 12.2 at 15.09, dat. # 2 at 20.001).



4.12 CRUDE BLATH RATE

4.28 : Showing enqual grude birth rate in 1.C.D.S. and Table NOR-L.C.D.S. Areas.

	Popus lation	Number of	<u>birth in</u> Female	One Year. Total	Crude birth rate/1000
1.C.D.b.	3088	*	27	54	•
Non-I.C.D.S.	2532		30		

Crude birth rate in I.C.D.S. group were 16 per 1000 population and in Mon-1.C.D.L. group 32 per 1000 population.

4.13 MORTAL YEY

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Table 4.29 : Showing infant mortality rate in I.C.D.D. and Non-1.C.D.S. gress.

one year kale Penale	10tal	rate
		100.0
Hon-Z-C-D-6 61 6		343.63

Infant mortality rate in I.C.D.D. group was 100.0/1000 live birthe while it was 111.1/1000 live births in the Non-I.C.D.S. group.

a i fiedh i h

Hillark

Age (Years)				B)	Popula-	C.D.S. S	A STATE OF THE PARTY OF THE PAR	Popula- No. of Death rat		
nei	10 0 - 10	gaptel and colle	ine supar	Oppose of the Opposition of States	tion at	death	Death rate per 1000	tion at risk		per 1000
·	0	with	1		78		89.7	93	10	107.5
4	Ļ	1256	5		371	5	13.5	330	7	21.2
4)	***	5		449	12	26.7	423	27	40.2

For age specific death rate, population in that particular age at the time of survey was taken as population at risk. Overall mortality (9-5 years) was 26.7/1000 in 1.C.D.S. group and 40.2/1000 in Non-1.C.D.S. group. Mortality rate in 1-5 years age in 1.C.D.S. group was 13.5 per 1000 population while it was 21.2 per 1000 population in the Non-1.C.D.S. group. Mortality in 0-1 year age in 1.C.D.S. group was 89.7 per 1000 population while it was 107.5 per 1000 population in the Non-1.C.D.S. group.

Table 4.31 : Causes of death in the children.

Causes of	AN EAT PORTUGE REPORT AND ADDRESS.	1.C.D.S Year	e gaya 1-1			Non-I.		Group Vent
death.	110.	14	20.	34	No.	*	No.	
Birth injung	•	14.3				20.0		
Tetanus (1886);;;; neonatorum	•	24.3				20.0		
Respiratory infections	**************************************	20.6		40.0		20.0	***	34.3
Diarrhoed Miseaso	, .	14.3	.,. .	20.0		30.0	•	20.6
Marabad 1 1.	Mar L 11	11 🕳 🖽	eri e ri e	•		i (i	8	20.6
Sthees - IIII		20.6	2	40+0	1	10.0		20.6
otal	7 :	100-0	9 1	00.0	10	100.0	1	100.0

Causes of death were assessed on the basis of symptoms described by parents.

was respiratory infections (28.6 percent) while in Non-1.C.D.b. area it was diarrhoeal diseases (30.0 percent). Major causes of 1-5 years mortality in 1.C.D.S. area were respiratory infections and typhoid fever (40.0 percent each). While in Non-1.C.D.S. area major causes were diarrhoeal diseases and marasmus (28.6 percent each).

4.14 UTILISATION OF HEALTH SERVICES

Table 4.32 : Type of medical care availed.

Type of services	1.0.0.6. Group (n=423)	Non-1.C.L.S.Group (n=403)
	No. 36	No.
Government agencies	302 71.4	232 54.9
Private Practitioner :		
• Allopathic	167 39.5	108 25.5
- Ayurvedie	150 35.5	81 19.2
- Cuscles (), in particular	56 13.2	120 29.6
		9422.6

Note than one agency may be utilised in single instance.

Covernment agencies were utilised in 71.4 percent cases in

1.C.D.S. group as compared to 54.9 percent in Non-1.C.D.S. Group.

AND LONG BOOK PROPERTY OF THE PROPERTY OF THE

This difference was statistically significant (2 = 4.99.

P \(\triangle 0.01 \)). Utilisation of Homeopathy was nil. 20.1

percent in I.C.D.S. and 22.6 percent in Non-I.C.D.S. group depended on traditional healers, advice of relatives and neighbours or self medication.

Table 4.33: <u>Distribution of children according to</u>

	I.C.D.S.	Croup	Mon-I.C.D.	The state of the s	
Ante-natel care	No. %		100	*	
Availed Not svailed		45 . 9 54.1	73	19.6 81.4	
	423 1	00.0	403	10040	

respect of 45.0 percent children of the LiC.D.D.

and only 18.6 percent of Mon-LiC.D.D. Group.

and the state of the property of the state of

This difference was found highly significant ($x^2 = 69.68$, d.f. = 1, P \angle 0.001). In I.C.D.S. and Non-I.C.D.S. groups both, antenatal care was provided by A.N.Ma/H.V.

Table 4.34: Distribution of children according to place of delivery and type of birth attendent.

Place of delivery and type of birth attendent	No. X	Hon-LaC	.D.S.67949 %
196p 14 al.	29 6.9		18.4
 Comp	394 93.1	329	81.0
- Trained person	166 39.2	40	11.9
- Untrained person	228 53.9	201	69.7

In 1.C.D.S. group, 39 (6.9 percent) and in Non-1.C.D.S.
group, 74 (18.4 percent) deliveries were conducted in hospital.
However, this difference was significant statistically (2 = 5.46,
P (0.01). Most of the deliveries in both 1.C.D.S. and NonI.C.D.S. groups (93.1 and 81.6 percent respectively) were
conducted at home.

go g parcent of bone deliveries in 1.C.D.S. group were conducted by trained personnel (trained Del/A.S.M./N.V. or Dector), while in Non-I.C.D.S. only lie percent of home deliveries were conducted by trained personnel and this difference was highly significant statistically (x2 = 55.21, def. - 1. 9 / 0.001).

4.15 FEEDING PRACTICES

4.15.1 Breast Feeding

Table 4.35 : Total duration of breast feeding.

Total duration of breast feeding (months)	LLC.D.	\$	Non-1-C	W.S. GEORGE
4 6		3.5		2.4
6 - 11	30	12.1	32	11.1
12 - 17	•	18.7	43	14.9
18 - 23	127	40.3	133	46.2
24 & above	00	25.4	73	25.4
Total	318	100.0	203	100.0

Total duration of breast feeding refers to the period till the child is put on the breast, which may be in addition to other food stuffs. Out of 423 children in I.C.D.S. group, there was 108 (25.5 percent) children were still breast fed at the time of study. Out of 403 children in Non-I.C.D.S. group, there were 115 (20.5 percent) being still breast fed at the time of study.

and 43 (14.5 percent) children in Non-I-C-D-S- group were on brown upto in months. Stat percent children in I-C-D-S- group were on wall as in Non-I-C-D-S- were found on brown with after M months of age. Majority of children in both I.C.D.S. (40.3 percent) and Mon-I.C.D.S. (46.2 percent) groups were breast fed upto 18-23 months of age. These differences in I.C.D.S. and Non-I.C.D.S. groups were not statistically significant (X² = 3.15, d.f. = 4, F 77 0.05). Mean duration of breast feeding in I.C.D.S. and Non-I.C.D.S. groups were 18.6 and 13.9 months respectively.

4.15.2 Weening

Table 4.36 : Ace at wearing.

	CONTRACTOR DESCRIPTION			5.5.Group
			20.	
		•••		1.5
La - Ba managang ang Managang ang San	203	57.0	107	
	103	29.1	160	47.1
24 6 POYS in Michigan The Harris T. Inc.	i n 18 11 AM (11.11)			
그는 그는 그를 가장하는 것이 하다면 생각을 가면 생각을 가장하는 것을 가장 하는 것이 되었다. 그는 그들은 그는 그들은 그는 그를 가는 그를 가는 것이 되었다. 그는 그를 가는 그를 가는 그를 가는	ing in the second	Marks C. Dr. C.		2.9
		203 103 103		

purjointly of children (57) percent year descent toruses 6 = 12 contact of act in its --- group water weeken associaty (47) percent in Non-1-2-D-- group water weeken betweek 12 = 18 months of act in the contact in the second 24 months. while in Non-L.C.D.S. group, 2.9 percent children were weamed even after 24 months of age. These differences were found statistically significant (X² * 56.87, d.f. * 3. P \(\sum 0.001 \). Mean age at weaming in L.C.D.S. group was 11.8 months, while in Non-L.C.D.S. group it was 16.2 months.

Table 4.37 : Type of weaning food given to children.

Weaning	£ood	I.C.D.S.	Group.	Non-	L.C.D.S.Grou
Cereals		354	83.7	340	84.4
Pulses		21.6	83.3	106	26.3
	Le & Soules	es Latricia de la	22.0 1.0		20.8
agg and		ani didi ⁹ idi			

and the state of t

contact in Non-Leading and Leading the Leading to the Coronal as well as in Non-Leading story (as a percent in Non-Leading story (as a percent in Non-Leading story (as a percent in Non-Leading story) (as a perc

Table 4.38 : Type of supplementary nutrition given.

Type of mentary	supple- nutrition	1.C.D.S.Group (n=423)		Non-1.C.D.S. Group(n=403)			
		No.	*	No.	*		
Vitamin concent		277	65.5	68	15.4	17.16	<u>_0.01</u>
iron & :		145	34.3	35	9.7	10.89	۷0.01
Supplem	entery food	116	27.4			•	

Regarding Vit. 'A', parents were asked whether it was given during preceding 6 months and for Iron & folic acid and supplementary food, it was enquired as to how frequently the child received it during the last month. Coverage of Vit. 'A' and Iron & folic acid was statistically higher in I.C.D.S. group (65.5 and 34.3 percent respectively) as compared to Non-I.C.D.S. group (15.4 and 8.7 percent respectively).

Table 4.39 : Periodic medical check-up of children.

	I.C.D.S. Group	Non-1-C.D.B.Group		
medical cheristy	B0. 1	10.		
	100 40.5	•	9.0	
Dane Not done	240 56.7	363	90.1	
Total	423 100.0	403	100.0	

In I.C.D.S. group, periodical medical check-up of children was done in 43.3 percent while it was only 9.9 percent in Non-1.C.D.S. group. This difference was found highly significant (X² = 116.38, d.f. = 1, P \(\subseteq 0.001 \). In all children in both groups, medical check-up was done by ARMS/HV.

48

1.3%

1 (4/8)

264

1114

tation at a Marketina

CHAPTER V

5. <u>DISCUSSION</u>

a national effort for improving the health and well being of the most vulnerable group of population aged under 6 years. The other beneficiaries of the I.C.D.S. scheme are also pregnant women and nursing mothers. The scheme has extended its services in selected areas since 1975 (Tandon 1982) and Chirgaon Block, where the scheme was started in 1980-81, is the universe of this study. To have an appraisal of the services and to assess the impact of the scheme, the health status of 423 children of I.C.D.S. Block Chirgaon and 403 children aged under 6 years of the adjoining Non-I.C.D.S. block Baragaon of district Jhansi have been studied.

5.1 Bio-social characteristics of study population

Most of the children were Mindus in both the groups
but alightly more in Mon-Licabis, group, seemly three-fourth
of the children in Licabis, (40-2 percent) and Mon-Licabis.

group (73.4 percent) belonged to scheduled and backward castes. More than half of the children in both the groups were from larger families comprising of more than 6 members.

Majority of children in the I.C.D.S. and Non-I.C.D.S. groups belonged to the joint families. Per capita monthly income of the families of the majority, in both the groups were having income of M. 60 - 139. Supta et al (1984) have reported that majority of the children in both the groups were from larger families comprising of more than 6 members; and majority of the children of both the groups were from joint families but families of majority in both the groups were having per capita monthly income of less than M. 50/-per month.

In the two groups of children studied, though showed some variation, has not been significant. Majority of the parents in both the groups were illiterate. Supta et al (1984) have also suported, majority of the parents in both the groups of the main occupation of the family of both the groups of children showed some variation, but not very significant. Majority of the families were:

having agriculture at main occupation.

Nost of the children (54.6 percent) were either
Let borne or second borne in I.C.D.S. group, while elightly
less (49.4 percent) in Nos-I.C.D.S. group, this difference
to etatictically not significant. Thus, the children in the

I.C.D.S. and Hon-I.C.D.S. blocks have been fairly well matched in respect of their various biological, familial and economic characteristics.

5.2 <u>Lavironmental conditions</u>

In the present study 76.6 percent of the I.C.D.S.
and 86.6 percent of Non-I.C.D.S. group were found, dependent
on open shallow wells for water supply. These findings have
been in line of the observations of Shive Rem (1969) and
Singh (1970) and by and large support the observations of
W.H.O. (1976) which states that 82.0 percent of rural
population does not have assess to the safe water supply.
Recently, Maheshwari (1881) has also observed that 89.2
percent of population received water from open shallow wells
and Gupta et al (1984) has also observed that 94.2 percent
in I.C.D.S. and 97.8 percent of Non-I.C.D.S. group were
dependent on open shallow wells for water supply. Interestingly,
significantly higher percentage (23.4) of the I.C.D.S. group
were receiving safe water than the children of the NonI.C.D.S. group (13.4 percent).

particular of Locarda group. Shir has (1969) and water (1976) and reported to the particular and the particular curst population of the theory disposal of extrema while subscitute (1981) reported 7.0 percent in tural areas of extrema to the particular of extrema to the particular of the particular curst areas of extrema to the particular curst and extrema to the particular particular of extrema to the particular curst and extrema to the particular curst and

better in I.C.D.S. group in comparison to Non-I.C.D.S.
group (30.7 percent and 21.8 percent respectively).

Over-crowding has been absent in 35.5 percent and 33.0
percent, while ventilation was adequate in 24.1 percent
and 20.8 percent houses of the children of I.C.D.S. group
and Non-I.C.D.S. group respectively. Shiva Ram (1969)
reported the adequacy of ventilation in 20.9 percent of the
population studied and Gupta et al (1984) reported adequacy
of ventilation in I.C.D.S. group, and as such the observations
of this study show a higher number having adequate ventilation
than these researches. However, the criteria for adequacy
of ventilation could not be compared to attach any
significance to this finding.

5.3 Pregnant, Lactating women and Family Planning Bervices

natal care in L.C.D.S. group as compared to Non-L.C.D.S.group (15.8 percent) in the form of iron & folic acid tablets and medical check-up facility. In L.C.D.S. group, tetanus tomoid was given to 32.3 percent pregnant women while in Non-L.C.D.S. group only 15.8 percent. 81.7 percent lactating women walled postnatal care in L.C.D.S. group and only 38.9 percent in Non-L.C.D.S. group by utilizing iron & Solic acid tablets and health check-up facilities.

enter and the state of the state of

In I.C.D.S. area, family planning services was given to the eligible couple in form of tubectomy (12.1 percent) and vasectomy (0.6 percent) and in Non-I.C.D.S. area tubectomy (6.9 percent) and vasectomy (0.4 percent). Oral contraceptives was given to 9.5 percent women in 1.C.D.S. area and only to 1.7 percent women in Non-I.C.D.S. area. Vasundhara et al (1983) have reported, the increase in the acceptance of family planning methods especially sterilization in the I.C.D.S. areas was highly significant in comparison to control area. 40.0 percent sterilized couples of I.C.D.S. group were already having 5 children and 35.3 percent sterilized couples of Non-I.C.D.S. group were having 6 or more children.

5.4 ANTHROPOMETRY

5.4.1 <u>Height</u>

Children in I.C.D.B. group had higher values for weight as compared to Non-I.C.D.B. group in all ages and in both sexes, but the difference in males and females was statistically significant from 1 to 5 years of age and not significant from 0 - 1 year of age. Male children in all ages were having higher values for mean weight than that of the female in both the I.C.D.B. as well as Non-I.C.D.B. groups. Children in both the groups were having mean weight less than reported by I.C.M.R. (1973) in all ages. Similar has been the observations of Bakkhi et al (1977). Chandra et al (1978).

who have also observed male children to be heavier than females and both sexes having mean weight less than I.C.K.R. Standards.

5.4.2 Height

Children of both the sexes in 1.C.D.S. group were having higher values for height in all ages as compared to Non-1.C.D.S. group and this difference was statistically significant at the age of 4+ years in makes and 3+ 5 4+ years in females. It may be due to the consideration that stunting occurs only in chronic malnutrition. This was observed by Secome and Latham (1971), Waterlow and Alleyne (1971) and Shastri et al (1973). Thus the deficit height, as an indicator of the duration of malnutrition, would be evident at an older ages.

In both 1.C.D.S. and Non-1.C.D.S. groups, males were taller than females in all ages. Bakehi et al (1977) found boys to be taller than girls except at five years of age, while Srivastava et al (1980) and Supta et al (1984) reported similar findings as observed in the present Study.

in comparison with I.C.M.A. Standards, children of both semms in both groups were having lower values. Similar has been the observations of Chandra et al (1978), Srivastava et al (1980) and Verma et al (1980) & Gupta et al (1986).

5.4.3 <u>Weight-Height Index</u>

Weight/Height² ratio has been equally valid in comparison to weight for age method in detecting mainutrition

(Sen et al. 1980). Weight-height index showed that upto 6 months of age children in both 1.C.D.S. and Non-1.C.D.S. groups, were normal according to this index. This reaffirms adequacy of breast milk for nutrition of infants upto the age of 6 months. However, after 6 months, children in Non-1.C.D.S. group showed below normal index in all ages except in 4+ & 5+ years, whereas, in 1.C.D.S. group, this index was found below normal only at 2+ years of age in male and 1+ and 2+ years in females. This shows better nutritional status of children before 6 months and after 4 years of age and points out the most vulnerable age for malnutrition being 6 months to 3 years. Bakshi et al (1977) in their study of pre-school children have also observed better growth after passing vulnerable period of 1 - 3 years.

5.5 MILE STONES OF DEVELOPMENT

All mile stones except head holding and sitting were significantly delayed in Non-I.C.D.S. group of children. This could be attributed to the significantly higher prevalence of mainutrition in Non-I.C.D.S. group of children. Hathur et al (1974). Decki Handan (1978) and Cupta et al (1984) have also observed delayed milestones in maincurished children. It appears that basic objective of I.C.D.D. Schmack in promoting development of children is being gradually seniored.

5.6 MALMUTRITION

Protein energy malnutrition, in the present study has been classified as recommended by Indian Academy of Paediatrics (1972). Overall prevalence of P.E.M. was found significantly higher (82.1 percent) in Non-I.C.D.S. group of children in comparison to I.C.D.S. group (67.6 per 100). Moreover, prevalence of severe grades of P.E.M. (Grade III & IV) was 4.2 per 100 in I.C.D.S. group, whereas it was significantly higher 6.6 per 100 in the Ron-I.C.D.S. group. This shows positive impact of 1.C.D.S. scheme on the prevalence of P.E.K. specially of severe grades. This observation corroborate the findings of Sunder Lal (1980), Tandon et al (1981). Patel (1982) and Gupta et al (1982). Contrary to this, Petowary (1982) while evaluating the I.C.D.S. project in Assam, could not establish a significant change in the state of severe grades of malnutrition. Also, Bhandari et al (1981) did not find any significant improvement in the grades of P.E.M. during the period of one year from 1978 to 1979. It is evident that benefits from the I.C.D.S. scheme have not been uniform all over the country. The reasons for these differences need durther study.

Structure conducted in the general population (not covered by I.C.D.) in different parts of ladia have shown the carries read by I.C.D. (not condition to the carries adopted for the end proceding south-economic conditions in these case. Observations of study in Non-I.C.D. Group have the face in the case of study in Non-I.C.D. (1978) from

Tamil Nadu, Mathur et al (1978) from Udaipur, Soni (1980) from Rajasthan, Verma et al (1980) & Srivastava et al (1980) from Jhansi, and Tandon et al (1981) from Delhi, who have reported overall prevalence of P.E.M. 77 to 95 percent.

But Srivastava et al (1979) found a lower prevalence (43.1 percent) in a rural population of Lucknow. Contrary to this, Gupta (1977), Aya Ram (1980) and Tomer et al (1982) & Gupta et al (1984) who have reported lower prevalence of P.E.M. ranging from 70 to 73 percent. Severe grades of P.E.M. have been reported to be 14 - 16 percent.

There was significant difference in the prevalence of Vit. A deficiency in I.C.D.S. (0.7 percent) and Non-I.C.D.S. (3.9 percent) groups of children. This could be attributable to the higher coverage of Vit. A supplement in I.C.D.S. group of children. Patel (1982) has also reported decline in Vit. A deficiency from 4.4 to 0.7 percent in an I.C.D.S. group has been similar with the observations of Nathur et al (1974). I.C.M.R. (1977). Tendon et al (1981) and Gupta et al (1974). Considerably high prevalence of Vit. A deficiency has been reported by Chandra et al (1976) from Tenal Nucley Scoti (1980) & Temar et al (1982) from Rajasthan.

Shore has not been significant difference in the start of the start of

However, Patel (1982) noted decline of angular stomatitis from 1.7 to 0.2 percent in an I.C.D.S. area. Observations of this study regarding the prevalence of angular stomatitis have been similar to that of Srivastava et al (1979) and Soni et al (1980) & Gupta et al (1984). Chandra et al (1978) have observed angular stomatitis in 34.7 percent of Fural pre-school children of Tamil Nadu. These wide variations in the prevalence of angular stomatitis could be due to differences in food hebits of the people.

significantly higher provalence (38.2 percent) of ensemia was observed in Non-L.C.D.S. as compared to I.C.D.S. (23.5 percent) group of children. Patel (1982) has also reported declining trends in the prevalence of anaemia 15.0 percent in 1977 and 1.7 percent in 1980. On comparing the observations of Non-L.C.D.S. group with the studies conducted in area not benefited by I.C.D.S., findings of this study have been in line with the observations of Tandon et al (1981). Yerna et al (1981), Tomer et al (1982).

S.7 Medical State of the Community of th

were received by 58.9, 26.5 and 18.9 percent children respectively in I.C.D.S. group. Corresponding figures for Non-I.C.D.S. group of children were 41.4, 11.9 and 7.9 percent respectively. 2.4 percent children in I.C.D.S. group and only 0.7 percent in Non-I.C.D.S. group received booster dose of D.P.T. and Polio vaccine.

Measles vaccination was given to 30.0 percent children of I.C.D.S. group, while in Non-I.C.D.S. group 2.0 percent of the children received it. Sunder Lel (1980) reported coverage of B.C.G., D.P.T. & Oral Polio in 48.3. 69.9 and 46.0 percent children in an I.C.D.S. area. Similarly, Tundon (1981) in his report from different I.C.D.S. projects of the country has found coverage of B.C.G. and D.P.T. to be 49.2 and 17.6 percent respectively.

prom the foregoing discussions, it is evident that coverage of D.P.T. and Polio veccination in I.C.D.S. group of the present study has been in line with the observations of other workers but the coverage for B.C.G. was poor.

Chartestant of Drosen cued in the Annual State of State o

It has been pointed out by workers (Damena, 1979)
that immunization status depends much upon the educational
standards of the parents, especially of the mothers and
continuous health education has had a positive impact in
improving the status of immunisation in various regions.
In addition to it, easy availability of vaccines and door to
door facility, local customs, taboos and fear of complications
are determinants of immunization status of a community.
These may be the reasons for wide variations observed by
different researchers in different areas.

In Non-I.C.D.S. group, Daltal et al (1985) and Sahu et al (1985) have been also observed less coverage of B.C.G. (25.0 and 12.8 percent respectively), but Mohill (1987) observed higher coverage for the measles (23.7 percent).

5.8 MORDIDITY

5.8.1 Morbidity at the time of study

In both I.C.D.S. and Non-I.C.D.S. groups, upper respiratory tract infections and distribute a dysentery were major causes of sickness. There was significant difference in the prevalence of distribute & dysentery and upper respiratory tract insections in I.C.D.S.(12.1 and 9.5 per 100 respectively) as compared to Non-I.C.D.S. group (16.9 and 15.4 per 100 respectively). Better personal hydiens of I.C.D.S. group of children may be the possible explanation for this difference. Near spalls of sickness per 100 children as 33.1 in I.C.D.S. group as compared to 54.5 in the Non-I.C.D.S. group. This shows better health consciousness of

people in I.C.D.S. area. Patel (1982) has also observed declining trends in the prevalence of diarrhoea end skin infections in an I.C.D.S. area. Vasudeva et al (1982) have reported diarrhoee, eye infections, ear infection, URTI and skin infections as principal causes of morbidity. Gupta et al (1984) have reported URTI, diarrhoea & dysentery, skin infections and otitis media as major causes of sickness in both the groups of children. Maheshwari et al (1985) observed that malnourished children suffered more with variety of illnesses at the time of study.

intestinal and respiratory infections as major causes of morbidity in pre-school children (Chai et al. 1970; Gulati 1974; Mata 1975 and Datta et al. 1975). Chandra (1978) and Tandon et al (1981) have reported UNTI and diarrhoea to be the two major significant illnesses which has been in confirmity of present study findings. Whether it is diarrhoea or respiratory tract infections as a first cause of sickness which shows sessonal variation. It is evident that these are the two major sickness of pre-school age group.

in all ages. Percentages of sick children in both the groups aged 1 - 2 years was highest. This further confirms that 1 - 3 years age is the most vulnerable (Bakshi et al, 1977).

Vasudava et al (1982) found 64.0 percent children below 3 years of age to be ill at the time of study in an I.C.D.S. area. On the other hand, Tandon et al (1980) in the baseline survey of the project area (I.C.D.S.) have reported that about 9.0 percent rural pre-school children were sick at the time of study. These differences could be due to the differences in composition of population apart from the seasonal and regional variations.

5.8.2 Norm infestation

Out of the total stool sample examined (30.8 percent) in I.C.D.S. and significantly higher (39.1 percent) in Mon-I.C.D.S. group were positive for one or the other parasites. Setter personal hygiens in I.C.D.S. group could be one of the factors responsible for this difference. Patel (1982) has also observed downward trends in the prevalence of worm intestation in as I.C.D.S. area. Interestingly there was no significant difference in the prevalence of Anhylostoms and the other parasites except in secaris. This could be attributed to the insignificant differences regarding sanitary excrete disposal in the two groups. Ascerts was found to be the most common parasite in I.C.D.S. (20.3 percent) at well as in Mon-I.C.D.S. (36.3 percent) group. Bildhays (1977).

the prevalence of worm infestations (presence of one or the other parasite) ranging from 31 to 36 percent and Ascaris to be the most common parasite, which is similar to that observed in Non-I.C.D.S. group of children in the present study. Malhotra et al (1976), Gupta (1977), Chandra (1978), Gupta et al (1984) and Maheshwari et al (1985) have also reported ascaris to be the most common parasite encountered in their studies.

5.9 PERSONAL HYGIERE

In I.C.D.S. group, significantly lower proportion of children (44.0 percent) than in Non-I.C.D.S. group (69.7 percent) were having poor personal hygiene according to the criteria adopted. This shows the positive impact of health and non-formal education on the level of personal hygiene of I.C.D.S. group of children.

5.10 CRUDE BIRTH RATE

In the I.C.D.S. group, birth rate was 16 per 1000 population, while in Non-I.C.D.S. group, it was 32 per 1000 population.

Infant mortality rate in 1.C.D.B. group was 100.0

par 1000 live births as compared to 111.5 per 1000 live births
in Mon-J.C.D.B. group. Summer tel (1985) has reported countrie

mortality in 5 year estimates to be 26.3 percent per 1000

et al (1981) from Lucknow have reported infant mortality rate to be 124.0 and 117.6 per 1000 live births which have been higher with the observations of the present study in Non-I.C.D.S. group. Gupta et al (1984) reported infant mortality rate in I.C.D.S. group was 74.1/1000 live births, while it was 111.1/1000 live births in the Son-I.C.D.S.group. and Sunder Lai (1985) has reported infant mortality rate

population in I.C.D.S. group and 40.2 per 1000 in Non-I.C.D.S. group. 0-1 year mortality in I.C.D.S. group was \$9.7 per 1000 population as compared to 107.5 per 1000 population in Non-I.C.D.S. group and 1-5 years mortality in I.C.D.S. group was 13.5 per 1000 population as compared to 21.2 per 1000 population in Non-I.C.D.S. group. This shows that I.C.D.S. scheme have reduced the mortality. Oulse! (1967) has reported overall mortality in under five children to be 66 per 1000. However, in 1961, 25-44 per 1000 mortality has been reported in pre-school children by the Ministry of Health & Yanily Walfare, corresponds to the best state of the pre-school children by the Ministry of Health & Yanily Walfare, corresponds to the best state of the pre-school children by the Ministry of Health & Yanily Walfare, corresponds to the population of the pre-school children by the Ministry of Health & Yanily Walfare, corresponds to the population of the pre-school children by the Ministry of Health & Yanily Walfare, corresponds to the population of the population to be 24.3 per 1000 folders.

pingle major coups of 0-1 year mortality in I-Cababa area were respiratory infections (20-6 percent). While is Non-I-Cababa erea single major coups of 0-1 year mortality was distributed discuss (30.0 percent). This may be due to better medical care in I-Cababa area. Shuida (1981) had observed tetenus neonatorum (30.5 percent), diarrhoeal diseases (18.0 percent) and pneumonia (16.6 percent) as major causes of infant mortality, which is in conformity with the observations of present study in Mon-I.C.D.S.group.

Major cause in 1-5 years of age in I.C.D.S. area were respiratory infections and typhoid fever (40 percent each), while in Non-I.C.D.S. area major causes were diarrhoeal diseases and marasmus (28.6 percent each).

5.12 UTILIBATION OF HEALTH SERVICES

5.12.1 <u>Utilisation of medical care acencies</u>

Significantly higher percentage of children in I.C.D.S. group (71.4 percent) as compared to Non-I.C.D.S. group (54.9) were utilizing government agencies for medical care either by paramedical including Anganwadi workers or Doctors. 20.1 percent in Ec.D.S. and 22.6 percent in Non-I.C.D.S. group depended on traditional healers, advice of relatives and meighbours or self medication. Natural trust by frequent home visits could be one of the reasons for botter utilization of government agencies as well as anganwadi workers has also been reported by Cupta et al. (1981). Nost popular assengs the private practitioners has been those of the alloyablic system of medicine, which is similar to the observations of Tandon et al (1981) and Cupta et al. (1984).

5.12.2 Antenatal care

children in I.C.D.B. (45.9) as compared to Non-I.C.D.B. (18.6) group availed antenetal care. Tandon et al (1981 A) have also reported increased coverage for ANC (53.3 percent) in comparison to their baseline survey (71.8 percent). Oupta et al (1984) have reported mothers of significantly more 61.3 percent children in I.C.D.B. as compared to only 19.9 percent in Non-I.C.D.B. group availed entenetal care.

5.12.3 Place of delivery and type of birth ettendent

and Non-I.C.D.S. (81.6 percent) groups were conducted at home, but significantly higher (39.2) percentage of home deliveries in I.C.D.S. as compared to Non-I.C.D.S. (11.9) group were conducted by trained personnel. This shows more awareness of the people regarding notal care in I.C.D.S. area. Tandon et al (1991) in a baseline survey of different project area (I.C.D.S.) have reported more popularly of untrained personnel (untrained Dais, relative/neighbours etc.) in rural areas. Findings of this study in Non-I.C.D.S. group have been in concornity to the above mentioned study.

Sure et al (1976) have observed that nejority (92.7 percent) of the deliveries were conducted at home which is in line with the observations of the present study.

5.13 FEEDING PRACTICES

feeding of new borns in I.C.D.S. as well as in Non-I.C.D.S. groups. This has been in confirmity with the observations of Gupta (1979), Mirmel et al (1981) and Idris et al (1981) who have also noted the practice of breast feeding by almost all rural mothers. Prolonged breast feeding was observed in both I.C.D.S. and Mon-I.C.D.S. groups, mean duration of breast feeding being 18.6 and 18.9 months respectively. Similar has been the observations of Sharma et al (1977), Bahl (1979), Katiyar et al (1981) and Ajay et al (1982) & Gupta et al (1984) who have also noticed prolonged total duration of breast feeding in rural area.

5.13.1 <u>Meaning</u>

group and only 32.0 percent in Non-I.C.D.S. group were weened before attaining the age of 2 year. All children in I.C.D.S. group were weened before the age of 3 years while in Non-I.C.D.S. group, let percent were weened avenuances years of age. None age at weening in I.C.D.S. group, it was severed age. None age at weening in I.C.D.S. group, it was less a years of age. None age at weening in I.C.D.S. group, it was less a years at age in competions in I.C.D.S. group were weened as a section and in I.C.D.S. group were wanted to accomp the could be due to the health secretion by angeneral markets. Only 1.5 percent in I.C.D.S. group were weened percent the could be due to the health secretion by angeneral.

weaming by W.H.O. (1973). Delayed weaming in rural area has also been observed by Sharma (1977), Behshi (1977), Katiyar et al (1981) and Kumar et al (1981) and Gupta et al (1984).

In majority of the children of I.C.D.S. as well as Non-I.C.D.S. groups, cereals (83.7 and 84.4 percent respectively) and pulses (51.1 and 26.3 percent respectively) were used as weaning food. Vegetables and fruits were taken only by 22.0 percent and 20.8 percent of children in I.C.D.S. and Non-I.C.D.S. groups respectively.

5.14 SUPPLEMENTARY NUTRITION

coverage for Vit. A and Iron & folic acid was significantly higher in I.C.D.S. (65.5 and 34.3 percent) as compared to Non-I.C.D.S. (17.2 and 10.9 percent) group. Sunder hal (1980) has also observed increased coverage (Se.O percent) in repeat survey as compared to 2.3 percent in baseline survey. Zendon et al (1981 A) has reported that 43.6 percent rural children had received Vit. A supplementary nutrition through L.G.D.A., as compared to only 6.0 percent at the baseline survey and Supta et al (1984) has reported that coverage of Vit. A and Iron 6 solic acid was higher in I.C.D.S. (76.3 and 41.0 percent respectively) as compared to Non-I.C.D.S. (17.9 and 10.4 percent respectively) group.

reregaing discussions clearly shows that through the integrated services coverage for supplementary nutrition

has been tremendously increased. Possibly it is availability of these supplementary nutrients to the people (at Anganwadi centre of their village) and acceptability of these achieved through continuous health education.

No child in Non-I.C.D.S. and 27.4 percent children in I.C.D.S. group were given supplementary food. Coverage of I.C.D.S. group of children for supplementary food was much lower as compared to the observations of Sunder Lai (1980) and Tandon et al (1981) who have reported the coverage to be 97.0 and 57.3 percent respectively. Non-evailability of supplementary nutrition at most of the Angenwadis, because of administrative reasons, could be the cause of the poor coverage found in the present study.

5.15 PERIODIC HEDICAL CHECK-UP OF CHILDREN

Higher percentage of children in I.C.D.S. (43.3) in comparison to Non-I.C.D.S. (9.9) groups had periodic medical chack-up facility by A.H.NS/H.V.

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CHAPTER VI

6. CONCLUSIONS AND SUGGESTIONS

The following conclusions have been drawn on the basis of the observations of this study.

6.1 BIOSOCIAL CHARACTERISTICS OF THE GROUPS STUDIED

There has been no significant difference in the age and sax composition of the children of 1.C.D.S. and Non-I.C.D.S. study groups. Majority were Mindus in both I.C.D.S. (95.0 percent) and Non-I.C.D.S. (99.5 percent) groups. Among Mindus, 11.8 percent and 26.1 percent in I.C.D.S. and Non-I.C.D.S. groups respectively were of upper caste and remaining backward and schedule castes. More than half of the children in I.C.D.S. (61.7 percent) as well as Non-I.C.D.S. group (50.2 percent) belonged to family of more than 6 members.

of the families having agriculture. Majority of the children in both groups belonged to the families having per capita monthly income of No. 60 - 139.

6.2 <u>ENVIRONMENT</u>

common source of drinking water in 1.C.D.S. (76.6 percent) as well as Non-1.C.D.S. (86.6 percent) groups has been open shallow wells. However, a significant difference was observed regarding safe water supply. 1.e. hand pumps which was more in 1.C.D.S. area.

methods of excrete disposal. Insanitary methods have been the commonest mode of excrete disposal in both the groups.

and the second of the second o

6.3 PRECHART, LACTATING HOMES AND PARTLY PLANNING SERVICES

Calleing entended care and postnetal care respectively.

Pently planning services were utilised in more parcentage in I.C.D.S. eres so compared to Non-1.C.D.S. eres.

The need, therefore, is to educate and motivate to eligible couples for these services in both the groups by auxiliary nurse midwives, anganwadi workers and other health workers.

6.4 BUTRITIONAL STATUS

The values of anthropometric measurements - weight, height, were found lower in Non-1.C.D.S. group of children as compared to 1.C.D.S. group. The male children showed higher values then females for weight, height measurements in both the groups. Nean values of weight, height, in both the groups however, were lower than the 1.C.M.R. standards.

The weight-height index was below the standard (less than 0:15) at the age of 2° years in makes and 1° 4. 2° years in females of 1.C.D.S.; and at 6 months to 3 years in makes and females of the Non-1.C.D.S. group. This has been indicative of better nutritional status of 1.C.D.S. group of children as compared to Non-1.C.D.S. and also of better nutritional status of 1.C.D.S. better nourishment of make children than the females in both the groups.

Vitamin 'A' deficiency has shown significantly
lower prevalence in I.C.D.S. (0.7 per 100) as compared to
Non-I.C.D.S. (3.9 per 100) group of children. No significant
difference was observed in the prevalence of angular
stomatitis in I.C.D.S. (5.0 per 100) and Non-I.C.D.S.
(6.9 per 100) group.

of the total children investigated for Haemoglobin in I.C.D.S. (63.5 percent) and Non-I.C.D.S. (82.4 percent) groups, significantly lower percentage of I.C.D.S. (19.3) than the Non-I.C.D.S. (31.6) group showed a value of less than 10 gms. Only 4.2 percent in I.C.D.S. and 6.6 percent in Non-I.C.D.S. group were having Haemoglobin below 7 gms indicating borderline ansemia to be more prevalent in both the groups.

6.5 DIVELOPMENT

Energy in head holding and eltring, all mile stones in the children of hon-liciple group were found eignificantly delayed as compared to the Liciple group.

6.6 PRIDING PRACTICAL

prolonged total duration of break duration of br

and pulses were the common food items given as weaning food to the children in both the groups.

6.7 PERSONAL MYGIENE

According to the criterion adopted, a majority (46.1 percent) of the children in 1.C.D.b. group were found having fair personal hygiene, while the majority (69.7 percent) in Non-I.C.D.b. group had poor personal hygiene, the difference being statistically significant.

6.8 MORBIDITY

A significantly higher percentage of children in Mon-I.C.D.S. (41.6) as compared to the I.C.D.S. (27.9) groups were sick at the time of study; average sickness per sick child being 1.2 and 1.3 respectively. Upper respiratory tract intections, distribute & dysentery, skin diseases and fever have been the major causes of sickness in both the groups of children. Significantly higher provalence of distribute & dysentery, and respiratory infections (18.9 & 15.4 per 100 respectively) has been found in Non-I.C.D.S. group as compared to the I.C.D.S. group (12.1 & 9.5 per 100 respectively).

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(2 too-1.C.D.S. (30.1) as competed to 1.C.D.S. (20.0) wate

count perfect or one of the other personals.

(3 to most common personal morning of the both tree distances.)

6.9 <u>CRUDA BIATH BATE</u>

Crude birth rate in I.C.D.L. area has been 16 as compared to 32 per 1000 mid year population in the Non-I.C.D.L. area.

6.10 MORTALITY

Infant mortality rate in I.C.D.b. area has been 100.0 as compared to 111.1 per 1000 live birthe in the Non-1.C.D.S. area. The mortality in 0 - 1 year age group was found 89.7 per 1000 population in I.C.D.B. group and 107.5 per 1000 population in the Non-I.C.D.S. group. Single major cause of 0 - 1 year mortality in 1.C.D.D. area has been Respiratory infections (28.6 percent), while in Not-I.C.D.S. area the single major cause of 0 - 1 year mortality was Diarrhoeal diseases (30.0 percent). The mortality in 1 - 5 years age group was found to be 13.5 per 1000 in I.C.D.S. and 21.2 per 1000 in the Non-I.C.D.S. groups. Respiratory infections and typhoid fever in L.C.D.S.. maranus and diarrhoeal diseases in Non-1.C.D.S. group were found to be the major killer in this ege group. The mortality in 0 + 5 years age group was found to be 26.7 per 1000 population in I.C.D.S. and 40.2 per 1000 population in the Non-Lucutate govine

6.11 PRILIDATION OF SCALE SHAPES

A significantly higher percentage of children in L.C.D.L. (71.6) as compared to Non-1.C.D.C. (56.0) groups have been utilizing government agencies for medical caremothers of significantly more (45.9 percent) children in I.C.D.S. group as compared to only 18.6 percent in Non-I.C.D.S. group availed antenstal care.

both 1.C.D.S. (93.1 percent) and Non-I.C.D.S. (81.6 percent) groups, but a significant difference has been observed regarding the type of birth attendent. Najority of home deliveries in I.C.D.S. group (39.2 percent) were conducted by trained persons, while majority of the deliveries (69.7 percent) in Non-I.C.D.S. group were attended by untrained persons.

Coverage for all types of supplementary nutrition

Vit. 'A', Iron & folic acid tablets and supplementary food,

was significantly more in I.C.D.S. as compared to Non-I.C.D.S.

group.

Significantly more children (43.3 percent) in sonI.C.D.S. group as compared to only 0.9 percent in sonI.C.D.S. group svalled periodic medical check-up facility
by ASMA/N.

SUGGLATIONS

The following suggestions and recommendations have emerged on the basis of foregoing conclusions.

The health status of children studied from 1.C.D.S. area has been better than those of the Non-1.C.D..., yet there is ample scope for improvement which would follow the overall socio-economic development.

Programme of adult education particularly of women need be further strengthened so as to achieve functional literacy necessary for inculcation of health full habits and practices in the family especially children.

All Gut efforts need to be undertaken to improve the economic Status of the population. Implementation of newer agricultural techniques can be a positive step in this direction.

The content of the co

as a model for the women and children who avail its services. This may ultimately prove more effective in educating the community by developing aspirations amongst the women who may influence the head of families for appropriate action.

Though, the immunisation coverage is comparatively impressive but it is still below the satisfactory level and there is lot of mom for further improvement. Aegular supplies of vectimes, storage facilities at sub-centres and motivation of the parents for getting their children immunisad, require a strategy for better achievement.

Attention need also be given to booster dose of D.P.T. and Oral Folio Vaccine.

personal hypians, there is much to do. Angenwedis have to play a catalystic tole in this Situation. It seems that not much attention is given to this important aspect as many of the morbidity conditions observed, could have been prevented by improvement in personal hypians. The meet therefore, is not only to educate mothers and children has also to ensure that shaped

eits to expectation of difective and adequate coverage
but it has still not attained outsingertory levels to accomconcerted afforts to improve the quantity and quality of
services rendered by Auxiliary Nurse Midwiyes.

In the nutritional status but various anthropometric measurements showed lower values than those of well nourished group of Indian children. It may be due to the fact that supplementary food is not regularly available to beneficiaries of I.C.D.S. scheme. This on one hand neutralises the effect of the supplementary food given earlier, and on the other it develops a sense of dependence and expectation in the beneficiaries.

of the programme. It is suggested that purchase of supplementary food should be entrusted to the local village committee which will take been interest in the swallability of locally based supplementary foods and educate people about its necessity even if it is not available at Anganwadi centre.

There is no tenying of the fact that services of property on the health of hemeficiaries exacted but at the Same time it would not be appropriate to consider that maximum has reached to the children than that consider that maximum has reached to the children than that consider that maximum has reached to the children than that consider that maximum has reached to the children than that consider that a required the consideration of the consideration of the consequence of the consequen

and Auxiliary Nurse Kidwives (A.N.Ms) leaves to be desired. It is worth considering that the officers of the respective departments be made responsible for importing effective co-ordination amongst A.N.Ms and A.W.Ws so that they may not work in isolation but as complementary to each other.

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APPENDIX

A. PANILY SCHEATER

S.No.			Village :	
Date				
I. Ge	meral informations			
1.	Name of the Head	of the family :		
2.	Religion : Hi	ndu / Faslim /	Christian / Ot	here
3,	Caste : Up	per / Backward ,	/ Schedule cas	te / Others
4.	Nature of family	. Joint / 1	luclear	12 - 15 - 15 - 12 - 12 - 12 - 12 - 12 -
5.	Size of family	. Male	Female	Total
6.	Children below 6	yre.: Mele	Pemalo	204.01
7.	Main family occup	stion :		
	a) Agriculture	계시 사람이 되는 것이 하는 것이 없는 것이다.	그렇게 하다 가다는 어떻게 하다.	
	d) Service f) Beggary		pocify) e.g.	
	ally income :			
	Total income (per			
	Per capita income	로마로 이번 경우 보네요 경우 함께 되었다.		
	Harris Santa Parantina da Albaria da Albaria Albaria da Albaria da A			
	Leonaine s			
1.	Environment surrou	nding the house		
100120000	Number of living E		11/3/3	
	Over-erowding		; Propent /	
	Yentilation		. Adequate /	
	Water Supply		: Deep tube : Open shalk	well/Hand pum ow wolls.
	Sxereta disposal			Insanitary.

V. Bi	the and deaths in t	the family durin	g last one year :
1.	No. of births		
2.	No. of deaths		
	Age		
	Sex		
	Cause of death		
	ite mar Areanene e 1	services.	end Family Planning
A. PEG	gnant women -		
a)	Name	. 5	
b)	masband's name	. 521	
c)	Relationship with		
	the Head of the family		
a)	400	1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1	
e)	Parity	보고 10년 2월 2일 1일 1일 1일 12일 1일	
£)	Duration of pregnar	••*	44.0.10 40.04 41.4 42.0 43.0 140.00 150.00 150.00 150.00 150.00 150.00 150.00 150.00 150.00 150.00 150.00 150.00 150.00 150.00 150.00 150.0
9)	N o.of living child		
			14.1.1.1.4.1 (1995년 - 1917년 14일 - 191 - 1917년 - 1917년 - 1917년 - 1917년 - 1917년 14일 - 1917 - 1917년 - 1917년 - 1917년 - 1917년 - 1917년 14일 - 1917
n)	Antenatal services		
	1. 2.2.		liven / Not given
	2. Iron/Polic sold		프리막이 프라틴 회사를 하고 있는데 중요한다고 있다.
), Periodical medic		
B. Lac	tating women -		
a)	Name :	•	
b)	Art		
e)	Postnatal Cafe #		
	(i) iron / Polic e	la de la composición	
		made automobilem	: Given / Not given.

Y

C. Family Planning Services -

a Macno

- Flace

PHC/Sub-Centre / Covt. hospital /

Private

- By whom

Angenwedi / A.H.M./Doctor

- Dide effects & complications :

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A CONTRACTOR OF THE PROPERTY OF THE SECOND

INDIVIDUAL SCHEDULE

1.	a) Pather's name		
	b) Educational Status	: Illiterate/Primary/Middle	k above
	e) Occupation		
2.	a) Mother's name	2002년 - 100년 - 100년 12일 - 20일 - 20일 - 10일 - 20일 - 10일 - 10일 - 10일	
	b) Educational Status	· Illiterate/Primary/Middle 4	h above
	e) Occupation	일 것 않는데 함께 생각하다고 하는데 이름이 되는 수요. 다 기를 맞아들었는데 이름을 잃었는데 하고 있는데 이름을 받는다.	
3.	Name of the child	: 1일 1일 1일 : 1일 2일	
4.	Date of birth		
5.	Age and sex a sex and a sex	(현실) 전 10 10 10 10 12 12 12 13 13 13 13 13 13 13 13 13 13 13 13 13	
6.	Birth order	. 1/11/111/1V/V	
7.	Antenetal care evalled	0 Tab / Bo	
	If yee, by whom	: Angenwedl/A.H.M./Doctor	
8.	Place of delivery	· Home / Hospital	
9.	Birth attendent	1 Trained / Untrained	
10.	Peeding History		
147	e) Total duration of breast feeding	flaste / Farther Property	
	b) Age at vessing	British / Jacobska	
			w
	ec weening	Vegetable / Others.	
1.	Mile stones of development	(age in months) :	
	a) Head holding		
12.360	b) Sitting c) Teething		
	d) Crawling		

r Dirty / Clean d) Hairs

e) Hails a Cut

Not cut - Dirty / Clean

17. History of present illness: Present complaints if any :

1.00

21. Field notes if any

Giardiatis / Ascebiasis / Stranguloids.

KEY TO THE SCHEDULES A & B

- 1. Head of Family: Head of the family was considered as one who was recognised by all members of the family, as their head (Ramadwar, 1960).
- 2. <u>Family</u>: It is a group of biologically related individuals living together and eating from a common kitchen (Park, 1971).
- 3. Nature of Family :

Nuclear: Family consisting of husband, wife and their children.

<u>Joint</u> : Family consisting of inlaws and other blood relations in additions to husband, wife and children.

4. Educational Status

Illiterate : Those who can not read and write

Frince: : Those having formal education upto standard V.

Eldie : above : Those who received school education
up to standard VIII and above.

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5. Income : This has been considered as the southly earnings from posiciteal profits of revenue from one business.
lands, service of other sources, whereas total family members
Income was the forthly income of all the family members
Sean all sources.

- 6. Environment burrounding the House: If the locality surrounding the house was congested with dumps, refuse, casspools and presence of house flies and mosquitoes in large numbers, it was grouped as unhygienic, other locality, if any were called hygienic.
- 7. <u>Over-crowding</u>: A house was classified as over-crowded if occupancy per room exceeded the following standards:

Number of rooms Naminum number of persons

The second secon

Three

Four

Control Control of Control of

Pive or more 2m persons (addition two for each further

room)

Seven and a half

(A baby under 12 months is not counted and children 1 to 10 years counted as half unit).

- S. Vantilation : If the main living soom of the house had a door and window facing each other, window opening into open area and total area of doors and window not less than one-fifth of the floor area, the vantilation was recorded as adequate, otherwise inedequate.
- 9. <u>Excrete Disposel</u> : If it was a vaterment (P.R.A.l. type) latring, it was noted as canitary, otherwise insenitary.

- 10. Hearing : It is a process of change of an infent diet from mother's milk/milk to semi-solid or solid foods, age of wearing is recorded as the age when semi-solid or solid food is regularly given to the child.
- 11. <u>Grading of Protein Spercy Malnutrition</u> : Protein Emergy Malnutrition has been graded in four categories as recommended by Indian Academy of Pasdistrics (1972).

Normal - upto 80.0 percent of 50th percentile of Hervard Standards.

Ist degree - 71 - 80 percent of 50th percentile of Harvard Standards.

2nd degree - 61 - 70 percent of 50th percentile of Hervard Standards.

3rd degree - . \$1-60 percent of 50th percentile of Merverd Standards.

4th degree - __50 percent of 50th percentile of Hervard Standards.

(Pource - Nutrition Bub-Committee of Indian Academy of Paedistrics - Report of Convenor - Indian Paedistrics, 9 : 360: 1972).

- 12. <u>Personal Hydiona</u> : Level of personal hydione has been essessed by following scoring method : Meximum marks : 10
 - (a) Washing of hands after toilet : 2
 with soap 2, with clay 1, with water 1, Mone 0.
 - (b) Mouth/Teath cleaning / 2. Daily - 2, Irragular - 1, No - 0.

(c) Bathing : 2, Daily - 2, Irregular - 1, Rare - 0.

(d) Mairs : 2, Clean - 2, Dirty - 0.

(e) Nails : 2. Cut - 1. Not cut - 0. Clean - 1. Dirty - 0.

Seatu	8.		(10E)	
Cood		1	3 -	10
-				
Pals		•	5 -	
Poor			Less	than 5
